

# **The NRA Guide to Firearms Assembly**

**Rifles  
and Shotguns**

**Pistols  
and Revolvers**

 **A Publication of  
the National Rifle Association**



## **The NRA Guide to Rifles and Shotguns**

**NRA BOOKS** — Bill Askins, *Director*; Ted Bryant, *Editor*; Mike Fay, *Production Chief*;  
Angel Guzman, *Art Director*; Gerald B. Howard, Jr., *Copy Editor*; Cover photo by Randy Lamson.

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# Foreword

To some people, apparently, the most enduring remembrance is that of embarrassment. I can clearly recall a miserable few weeks over 40 years ago when, at age 9, I slept with a partially-assembled Colt Woodsman under my pillow.

Fear of being caught with the gun, which properly belonged in the parental cabinet, must have numbed my wits or my fingers, for I couldn't get the mainspring housing back into the frame. But I don't remember the fear, only the embarrassment when I finally asked for help in — as it turned out — forcing the housing home.

A general rule in firearms assembly is "don't use force," but as this book points out, there are exceptions. If I had only had a copy in 1939, I would have avoided an extremely unpleasant experience. This was impossible, of course, since the first edition of *NRA Illustrated Firearms Assembly Handbook*, as Volumes I and II were then called, didn't appear for another 20 years.

I bought them then, and my life has been considerably happier ever since. I recommend them now, in their greatly expanded versions, wholeheartedly to anyone who is interested in guns of any description or era. Not only will they give a good understanding of the function and construction of guns, and make disassembly/reassembly or repair easier, but they contain much historical information in a convenient format. Of great interest to me, of course, is the fact that they frequently provide knowledge as a substitute for embarrassment.

A handwritten signature in black ink that reads "Pete Dickey". The signature is written in a cursive, slightly stylized font. The "P" is large and loops around the "e". The "D" is also large and loops around the "i". The "e" is small and loops around the "y". The "y" is long and loops around the "e".

Pete Dickey  
Technical Editor  
*American Rifleman*

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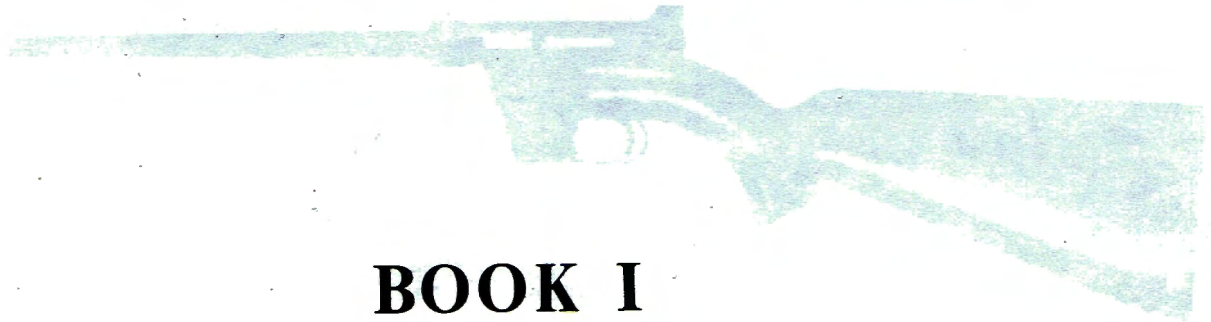
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## BOOK I

# Rifles and Shotguns

### SECTION 1.3.1

The first section of the book is devoted to the study of the various types of rifles and shotguns which are used in the field. It is divided into three parts: the first part deals with the general principles of the design and construction of these weapons; the second part deals with the various types of rifles and shotguns which are used in the field; and the third part deals with the various types of ammunition which are used in these weapons.

### Part I

The first part of the book is devoted to the study of the various types of rifles and shotguns which are used in the field. It is divided into three parts: the first part deals with the general principles of the design and construction of these weapons; the second part deals with the various types of rifles and shotguns which are used in the field; and the third part deals with the various types of ammunition which are used in these weapons.



# Armalite AR-7 .22 Rifle



By E. J. HOFFSCHMIDT

THE AR-7 Explorer rifle was introduced in 1960 by Armalite, Inc., Costa Mesa, Calif. Chambered for the .22 long rifle cartridge, regular or high velocity, this blowback-operated, semi-automatic rifle has an aluminum alloy receiver and a plastic buttstock in which the barrel and action can be stowed when not in use.

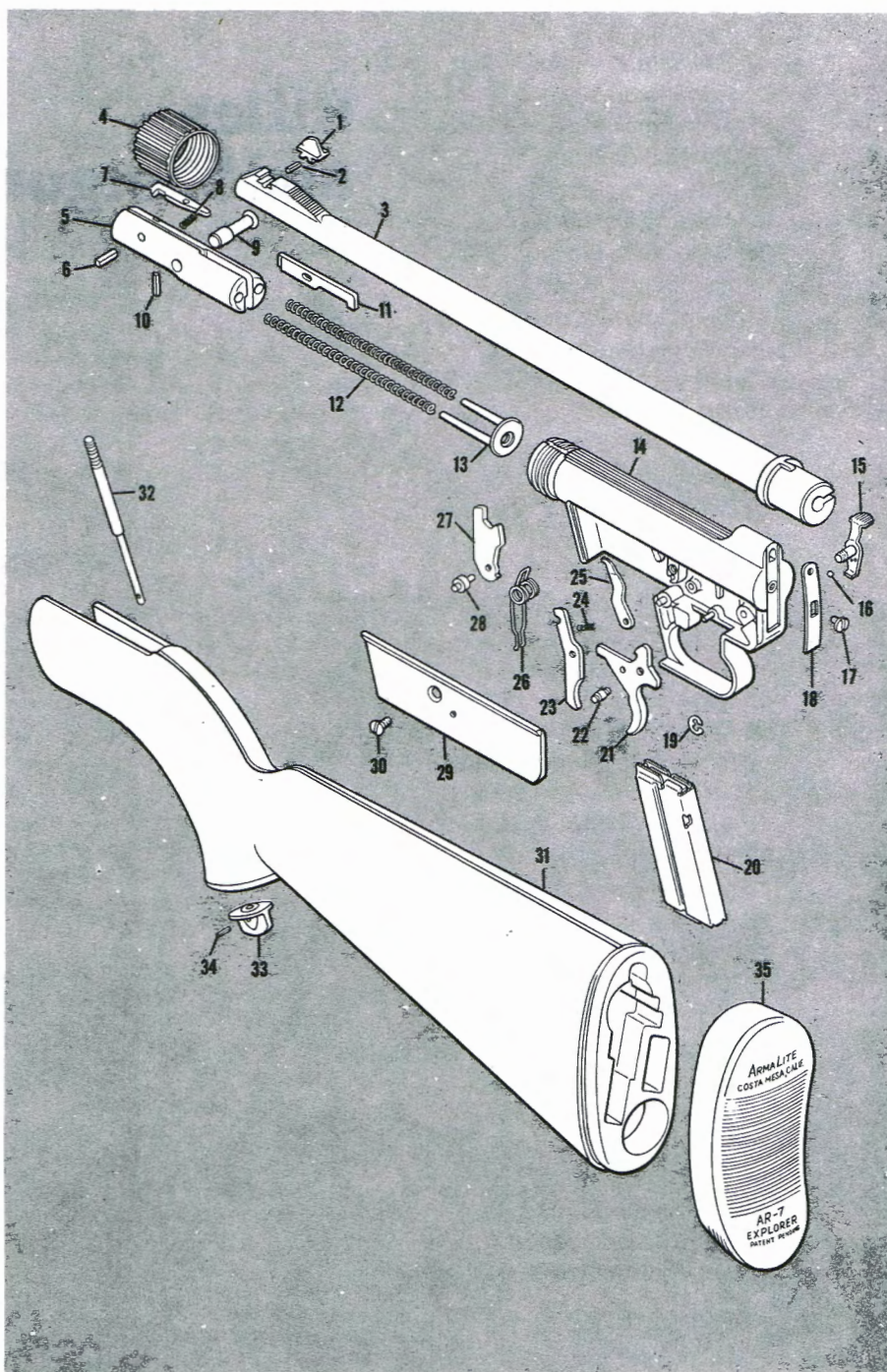
Of composite steel and aluminum construction, the 16" barrel is secured to the receiver by a knurled nut, made to be tightened or loosened with the fingers. Cartridges are fed from a detachable box magazine holding 8 rounds.

With butt cap in place on the stock, the AR-7 rifle will float in water in both stowed and assembled condition. It weighs 2 lbs. 14 ozs. and its assembled length is 35 1/8".

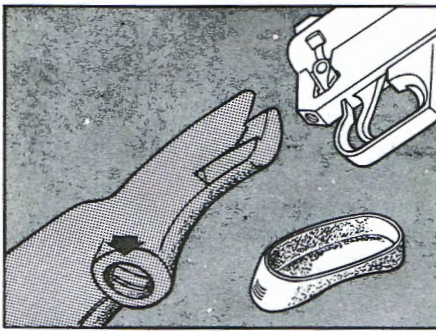
The AR-1 rifle is also available with solid walnut stock.

## Parts Legend

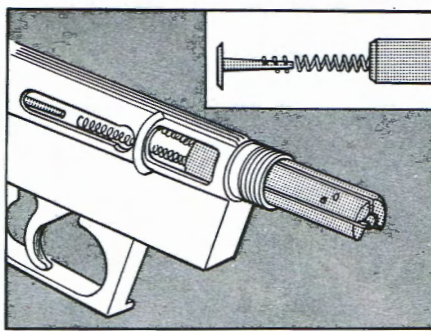
- |                             |                                |
|-----------------------------|--------------------------------|
| 1. Front sight              | 20. Magazine                   |
| 2. Front sight roll pin     | 21. Trigger                    |
| 3. Barrel                   | 22. Trigger spring support pin |
| 4. Barrel nut               | 23. Magazine latch             |
| 5. Bolt                     | 24. Magazine latch spring      |
| 6. Firing pin roll pin      | 25. Ejector                    |
| 7. Extractor                | 26. Hammer and trigger spring  |
| 8. Extractor spring         | 27. Hammer                     |
| 9. Charging handle          | 28. Hammer pivot pin           |
| 10. Extractor roll pin      | 29. Receiver side plate        |
| 11. Firing pin              | 30. Receiver side plate screw  |
| 12. Bolt action springs (2) | 31. Stock                      |
| 13. Bolt spring guide       | 32. Stock take-down screw      |
| 14. Receiver                | 33. Stock take-down screw nut  |
| 15. Safety                  | 34. Nut roll pin               |
| 16. Safety ball detent      | 35. Stock butt cap             |
| 17. Rear sight screw        |                                |
| 18. Rear sight              |                                |
| 19. Safety snap ring        |                                |



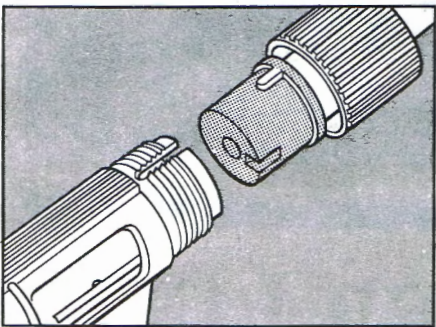




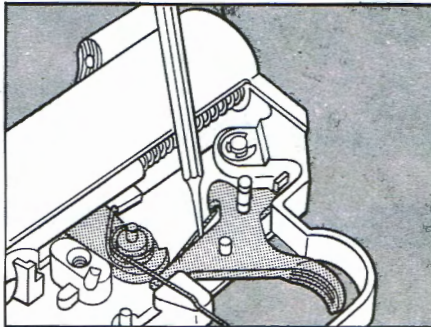
**1** The AR-7 is easy to assemble and take down. Remove stock butt cap (35) and withdraw barrel, receiver assembly, and magazine. Insert rear of receiver (14) into its corresponding slots in front of stock (31). Turn stock takedown screw (32) in base of pistol grip until it threads into receiver and locks the 2 together.



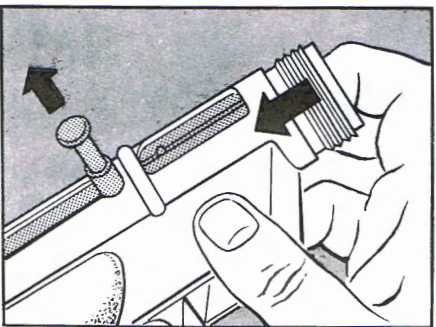
**4** To remove bolt, first cock gun and remove charging handle. Insert a finger into receiver and press bolt back slightly to free it; then ease it out through front of receiver. When replacing bolt, be sure plastic rods on bolt spring guide (13) slide inside bolt action springs (12); then push bolt in and replace cocking handle.



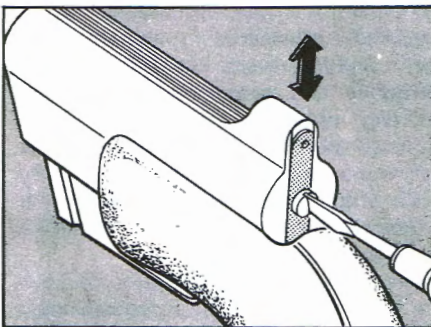
**2** After stock and receiver have been assembled, barrel can be installed. When joining barrel (3) to receiver, be sure key on barrel lines up with slot in receiver. Then push them together and thread barrel nut (4) over receiver until it is hand tight.



**5** To expose the mechanism, first uncock gun; then remove receiver side plate screw (30) and receiver side plate (29). Before removing internal parts, unhook hammer and trigger spring (26). When replacing parts, install hammer (27) and hammer and trigger spring; then trigger (21). Hold inside leg of spring up as shown and push trigger spring support pin (22) half way through trigger. Release inside leg of spring and lift outer leg over trigger spring support pin.



**3** The charging handle (9) must be pushed crosswise into bolt when receiver is stowed in stock. The charging handle can only be removed when barrel is out. Insert a finger or dowel into front of receiver. Push bolt (5) back slightly until charging handle lines up exactly with circular cutout in receiver, and then pull charging handle out.



**6** To adjust rear sight, loosen rear sight screw (17) and move rear sight (18) up or down.

## A Man to Remember

SETH POMEROY

*A soldier and a patriot  
of a gunmaking family*

Born—Northampton, Mass., May 20, 1706

Died—Peekskill, N. Y., Feb. 19, 1777

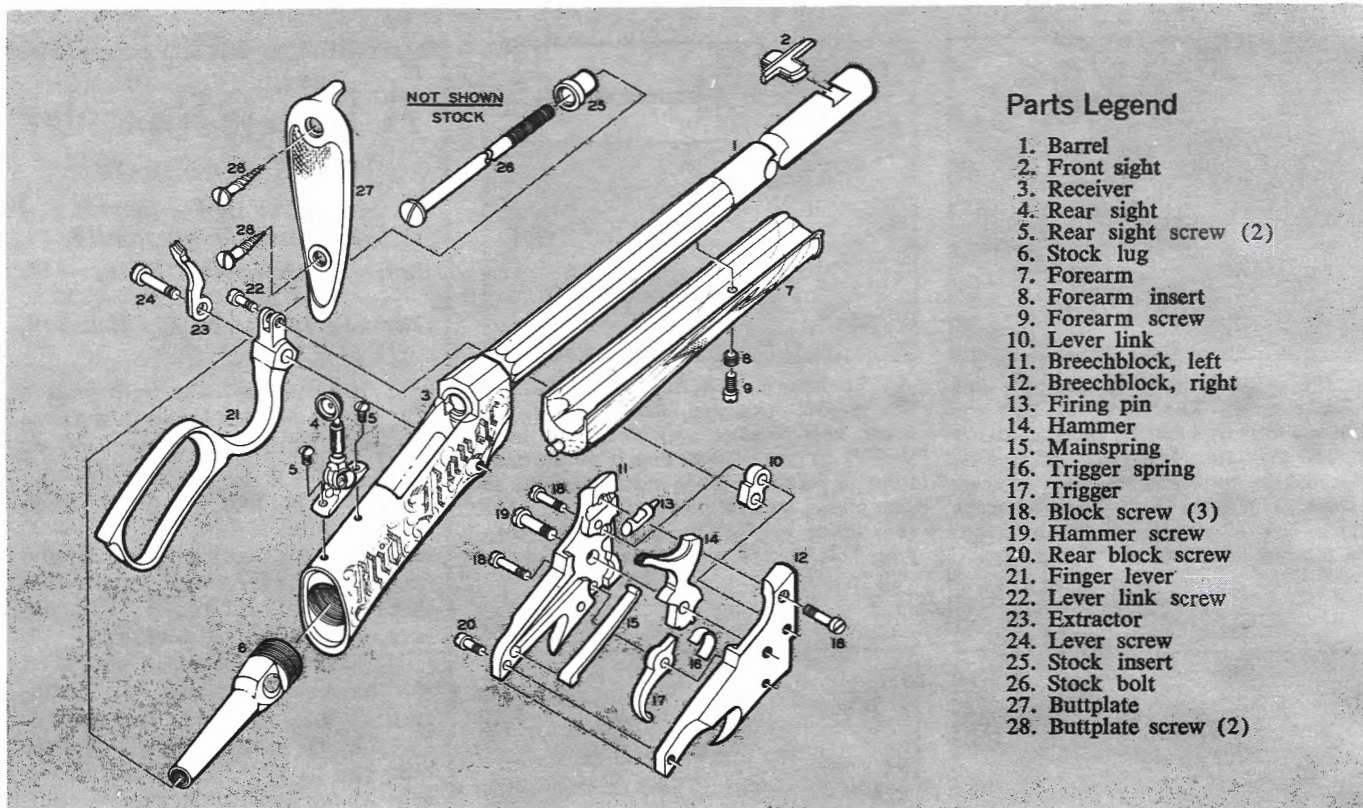
**S**ETH POMEROY was born into a family famous for its gunmakers for over 200 years, from 1630 to 1850. Little is known of Pomeroy's youth except that he grew up in Northampton and learned the blacksmithing and gunsmithing trades from his father and grandfather there, married on Dec. 14, 1732, and became the father of 9 children.

In 1743 he became an ensign of the local militia, and his distinguished military career was begun. In 1744 he was promoted to captain, and in 1745, as a major in the 4th Massachusetts Regiment, participated in the siege of Louisbourg where he distinguished himself by unspiking the enemy cannon and turning them on the citadel. In 1755 Pomeroy was lieutenant colonel of the troops raised in western Massachusetts which bore the brunt of the fighting with the French and Indians at Lake George. When the colonel was killed, Pomeroy succeeded to command and captured the French commander.

During the years of peace following the French and Indian War, Pomeroy practiced his gunmaking trade in Northampton and played an important role in local government. As war with England became imminent, however, he entered actively into the movement for liberty. He attended the first and second provincial congresses and was one of 3 officers appointed to military command of the province. Despite his age and rank he fought as a volunteer private at the Battle of Bunker Hill, carrying a musket of his own manufacture. When that was broken he reputedly retreated slowly by walking backwards, saying that no Pomeroy would ever be shot in the back.

Five days after the battle he was appointed the first brigadier general in the Continental Army. Still active in the field in his 71st year, he was on his way south to join Washington in New Jersey when he was stricken with pleurisy and died at Peekskill.—HAROLD L. PETERSON





# THE BALLARD RIFLE

By THOMAS E. WESSEL

ON Nov. 5, 1861, C. H. Ballard of Worcester, Mass., was granted U. S. Patent No. 33,631 covering a lever-operated, single-shot rifle action. Initial manufacture of rifles under this patent was by Ball & Williams, of Worcester, Mass. During the Civil War this firm sold 20,000 Ballard rifles to the State of Kentucky and also furnished the U. S. Government a total of 1509 carbines and 35 rifles. In 1866 production of Ballard rifles was taken over by the Merrimack Arms & Mfg. Co. of Newburyport, Mass., and in 1869 by the Brown Mfg. Co. of the same city, which firm ceased producing Ballard rifles in 1873.

In 1875 Ballard rifle production was resumed by J. M. Marlin of New Haven, Conn. In 1881 this firm became the Marlin Firearms Co., but there was no break in production of Ballard rifles. The exact date that Ballard rifle production was discontinued by the Marlin Firearms Co. is unknown, but 1891 was apparently the final year.

During a production period that spanned 30 years the Ballard rifle earned an enviable reputation for both accuracy and reliability. Ballard actions

were often used by gunmakers as the basis of fine target rifles, and even to this day it is not uncommon to encounter cal. .22 match rifles with Ballard actions in regular use by top-flight competitors.

Early Ballard rifles are relatively crude in comparison with the last models produced by the Marlin Firearms Co., but the basic action style remained substantially unchanged. Early Ballards were made for rimfire cartridges and some incorporated an auxiliary nipple which permitted use of loose powder and ball ignited by percussion cap. An improvement by J. M. Marlin was a reversible firing pin to permit use of center-fire or rimfire cartridges in the same rifle.

Receivers and breechblocks of rimfire rifles were usually of casehardened cast iron, but these parts were often forged for use with larger center-fire cartridges. Several different types of extractors, finger levers, and set trigger arrangements will be noted in the various models and makes of the Ballard rifle. Factory chamberings ran from the .22 short up to and including the .45-100-27 $\frac{1}{2}$ " Sharps.

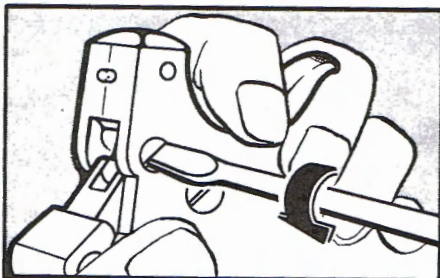


**1** To disassemble the Ballard rifle, first open action, then remove lever screw (arrow-24). Holding extractor (23) in place with left thumb, pull action down and forward and thence away

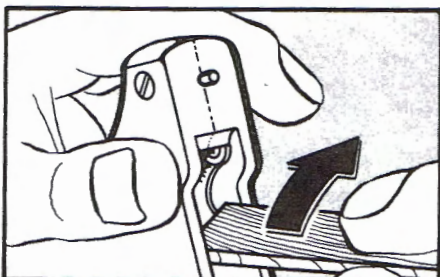


**2** Remove extractor by flicking it out with a finger tip

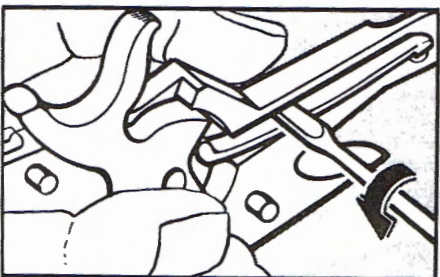




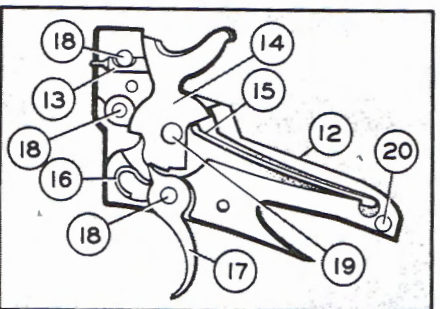
3 Next, holding action firmly, remove block screw (18) which retains lever link (10) in forward recess of breechblock. The finger lever (21), lever link, and lever link screw (22) may be lifted away from breechblock



4 Remove hammer screw (19), rear block screw (20), and 2 remaining block screws (18). Using a small length of  $\frac{3}{4}$ " wide hardwood slat, pry halves of breechblock (11 and 12) apart by inserting slat into forward recess and twisting. This will separate breechblock and expose all internal working parts



5 Continue by lifting away firing pin (13). Relieve spring tension on hammer (14) by placing a screwdriver blade against topmost surface of mainspring recess and top surface of mainspring, then twist slightly to depress mainspring. Hammer may now be lifted out and away. Remove trigger (17) and trigger spring (16). Reassemble in reverse order



Side view of right breechblock half shows relative position of component parts ■

## FAMOUS FIREARMS

### *Committee of Safety Musket*



ONE of the widely used and almost as widely misunderstood popular names given to a group of firearms is "Committee of Safety Musket". As it has come to be used in many circles today, it might mean any American-made musket of the Revolutionary War period. This is far from accurate usage. Many muskets were made in the Colonies at that time which had absolutely no connection with any of the various committees or councils of safety. On the other hand, many of the muskets purchased and issued by the committees of safety were foreign arms or nondescript weapons of other periods picked up wherever they could be found.

Thus, if the term is to be used in a pure sense to designate a group of arms, it can only refer to that small number of muskets made by American gunsmiths directly under contract to the committees and councils of safety and following their specifications. These muskets were few in number and made for only a short period. The first committee contracts were let in the late spring and early summer of 1775, after the battles of Concord and Lexington had already taken place. Then, as soon as new state constitutions were written and formal governments established, the committees and councils of safety were disbanded and their functions taken over by other bodies.

During the short period of their lives, however, the committees did establish specifications for the guns to be made for them, and thus it is possible to know what such a musket looked like. Such specifications still exist from almost every colony, and they are remarkably unanimous. Muskets were to be patterned after the second model Brown Bess with a 42" barrel and the British caliber of .75. Mounts were to be brass, but sometimes iron was permitted. Walnut was preferred for stocks, but maple also was allowed in many instances. In all details the British muskets were to be used as patterns for committee of safety muskets.

True committee of safety muskets of this type were made for only 2 or 3 years at the most. By that time the committees had been dissolved, and also the French pattern muskets with their smaller cal. .69 and banded construction had become more popular and were being adopted as standard.

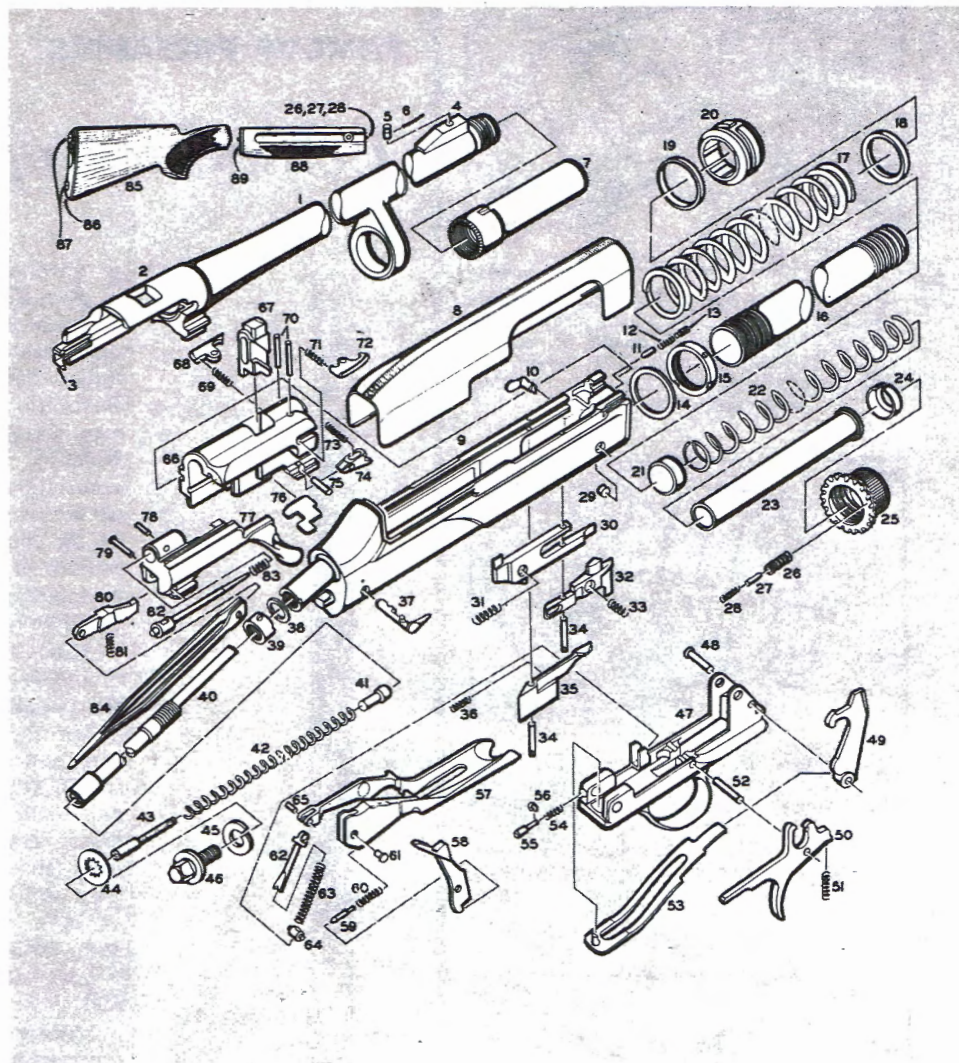
Even with all the contemporary specifications at hand, it is still not possible to state with certainty that a given gun was made for a committee of safety. It can, however, be identified as the proper type and the name used with some justification. At the same time it is possible to segregate the banded muskets of French pattern made in America with the reasonable certainty that these belong to the later years of the Revolution and were made either for Congress or one of the newly organized state governments.—HAROLD L. PETERSON



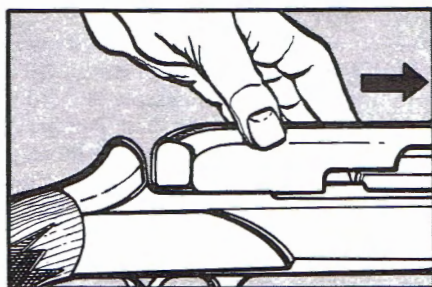
THE Breda 12-ga. Mark II semi-automatic shotgun is manufactured in Italy by Breda Meccanica Bresciana. There were 7 distinct production series in the 12-ga. Breda shotgun prior to introduction of the Mark II version in 1957. Production of the first series was begun in 1948. The Mark II series, designated 1008A, covers Breda 12-ga. shotguns numbered from 40,001, and includes the Breda Superlight model, also introduced in 1957, which is serially numbered from 500,001.

The design of the Breda Mark II shotgun is essentially a modification of the Browning long-recoil system. In this system the friction brake requires adjustment for light and heavy loads. Kits are available to convert 12-ga. standard models to 12-ga. Magnum.

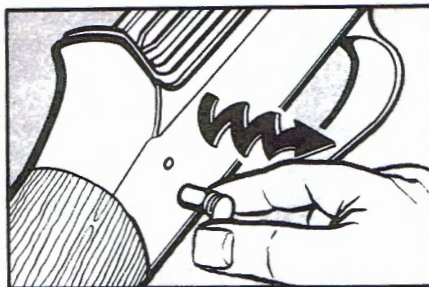
The magazine cut-off is operated manually by pushing the cut-off lever on the left side of the action to the forward position. Shells will not feed from the magazine into the chamber unless the cut-off lever is moved to its rearward position. Provision of the magazine cut-off permits the user to maintain a full magazine of shells in reserve. To unload the gun, engage the safety, and move the cut-off lever to its forward position. Then clear the chamber by retracting the operating handle to rear latched position. With gun inverted, depress carrier latch button and push carrier down to locked position. Move cut-off lever to rearward position. With index finger, depress the bolt pawl which will release all shells in the magazine.



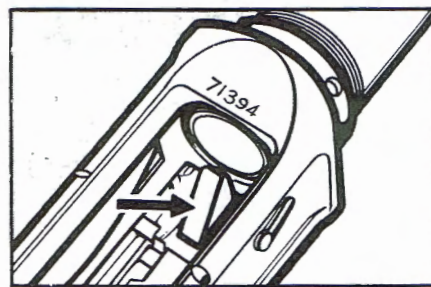
## Breda 12-Ga. Mark II Shotgun



1 To disassemble, engage safety, open bolt (66), press fore-end toward receiver (9), and unscrew magazine cap (25). Remove fore-end and barrel assembly (1). Remove bronze friction brake (20), beveled brake ring (19), recoil spring washer (18), and recoil spring (17) from magazine tube (16). Press carrier latch button (29) and guide bolt closed. Slide off receiver cover (8)



2 Push firmly on pin end of safety lever pin (37) (opposite side of receiver from safety lever portion) using magazine cap (25) as a thimble for thumb. Twist safety lever off engaged position and down clear of receiver. Pull out with twisting movement. With carrier latch button (29) depressed, grasp trigger guard (47) and swing assembly free, sliding the trigger guard assembly out of the action



3 Depress bolt pawl (74-arrow) with index finger of right hand and at same time slightly pull bolt rearward using operating handle (77) until pawl clears top of action. Press pawl against face of magazine tube (16) and slide bolt assembly forward through action guide slots and over magazine tube. This frees the bolt assembly from the action body



## Parts Legend

1. Barrel
2. Barrel extension\*
3. Ejector, with fixing rivets (2)\*
4. Front sight base\*
5. Front sight
6. Choking tube retaining spring
7. Choking tube
8. Receiver cover
9. Receiver
10. Magazine cut-off lever
11. Cut-off plunger\*
12. Cut-off plunger spring\*
13. Cut-off plunger spring screw\*
14. Magazine ring washer\*
15. Magazine ring\*
16. Magazine tube\*
17. Recoil spring
18. Recoil spring washer
19. Beveled brake ring
20. Bronze friction brake
21. Magazine spring follower
22. Magazine spring
23. Magazine reducer (2 shell)
24. Magazine spring retainer
25. Magazine cap
26. Magazine cap retainer screw\*
27. Magazine cap plunger\*
28. Magazine cap retainer spring\*
29. Carrier latch button
30. Carrier latch lever

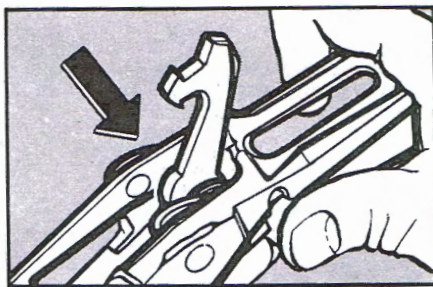
31. Carrier latch spring
32. Right magazine shell latch lever
33. Right magazine shell latch spring
34. Shell latch—carrier latch pin (2)
35. Left magazine shell latch lever
36. Left latch spring
37. Reversible safety lever—disassembly pin
38. Action spring tube lock washer\*
39. Action spring tube lock nut\*
40. Action spring tube\*
41. Action spring follower
42. Action spring
43. Action spring guide
44. Stock lockwasher
45. Stock spring washer
46. Action spring tube plug
47. Trigger guard
48. Hammer pin
49. Hammer
50. Trigger
51. Trigger spring
52. Trigger pin
53. Hammer spring
54. Safety plunger spring
55. Safety plunger
56. Safety plunger plastic washer
57. Carrier
58. Carrier dog
59. Carrier dog plunger
60. Carrier dog spring
61. Carrier dog pin

62. Carrier rocker arm
63. Carrier rocker spring†
64. Carrier rocker pivot†
65. Carrier rocker pin
66. Bolt
67. Locking block
68. Left extractor
69. Left extractor spring
70. Extractor pin (2)
71. Right extractor spring
72. Right extractor
73. Bolt pawl spring
74. Bolt pawl
75. Bolt pawl pin
76. Bolt plate
77. Operating handle
78. Firing pin retaining pin
79. Link pin
80. Operating handle latch
81. Link spring
82. Firing pin
83. Firing pin spring
84. Bolt link
85. Pistol grip stock
86. Buttplate
87. Buttplate screw (2)
88. Fore-end
89. Fore-end yoke\*

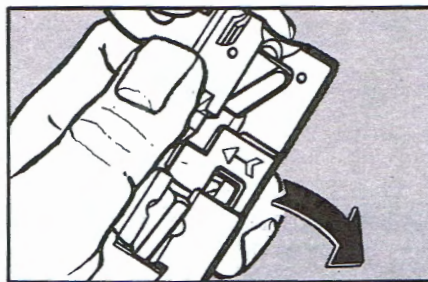
\* To be factory disassembled only  
† Permanent assembly to carrier rocker arm (Part 62)



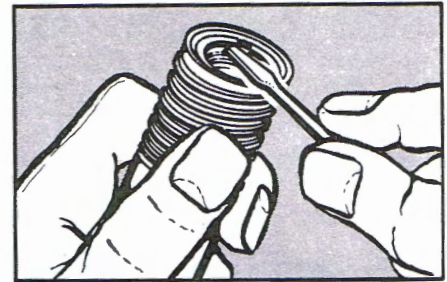
By THOMAS E. WESSEL



**4** Grasp rear portion of trigger guard (47) with left hand, and with right hand move carrier (57) downward and then away from lugs on guard as shown. Lift carrier away, together with carrier rocker arm assembly (62, 63, 64, 65). Drift out hammer pin (48) and remove hammer (49) and hammer spring (53). Drift out trigger pin (52) and remove trigger (50) and trigger spring (51)



**5** Hold bolt (66) upside-down and push bolt link (84) down and forward. Slide out bolt plate (76). Pull link back and slide out link, operating handle (77), and firing pin (82). This enables the locking block (67) to drop out. Other bolt disassembly is obvious. When reassembling the bolt, reinsert bolt plate (76) in direction indicated by arrow stamped on the bolt plate



**6** To remove parts from magazine tube, pry out magazine spring retainer (24). Magazine reducer (23), magazine spring (22), and magazine spring follower (21) may be withdrawn. To remove stock, remove buttplate screws (87) and buttplate (86). Using 9/16" T-handle socket wrench, turn out action spring tube plug (46). Maintain pressure on wrench to prevent action spring (42) flying out ■

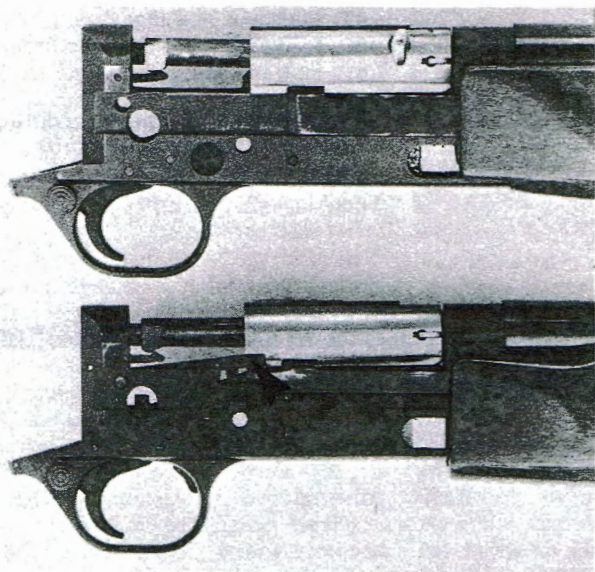


# BROWNING



# BAR-22

BY ROBERT N. SEARS



Removing the receiver cover exposes the BAR-22 rifle's mechanism. The BPR-22 action shown below has a breech bolt lock (arrow) and action slide lock which the semi-automatic BAR-22 does not.

Browning's BAR-22 was introduced in 1977 as a companion to the BAR centerfire rifle introduced 10 years earlier. Of straight blowback operation, the semi-automatic .22 rimfire rifle is manufactured by Miroku Firearms Co. of Kochi, Japan.

The rifle's construction is unusual in that what appears to be the receiver is actually only a cover. Removing the cover exposes the breechbolt and firing mechanism which are retained in a mechanism housing or receiver made integral with the trigger guard. Most BAR-22 parts are interchangeable with its counterpart, the BPR (Browning Pump Rifle)-22. The pump version, which has a higher number of parts, fires from a locked breech rather than a blowback action. It is made for the .22 Winchester Mag. rimfire cartridge as well as the .22 long rifle.

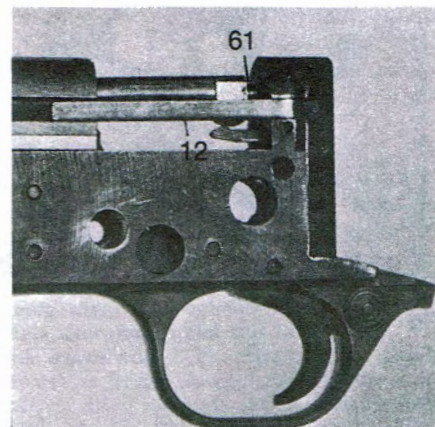
The BAR-22 rifle has a 20 $\frac{1}{8}$ " barrel and a tubular magazine which holds 15 .22 long rifle cartridges. It has an overall length of 38 $\frac{1}{4}$ " and weighs 6 $\frac{1}{2}$  lbs. The receiver cover of the Grade II version is embellished with small game scenes.

A ramp-mounted bead front sight and an adjustable folding leaf open rear sight are standard. The receiver cover is grooved for tip-off telescope mounts. The rifle's serial number is stamped on the lower right wall of the receiver cover. ■

### Disassembly Instructions



1. Make sure the magazine and chamber are empty and close the action. Remove the take-down screw (62) from the left side of the receiver. This allows the butt stock and receiver cover to be tipped upward slightly. The cocking handle (11) may then be removed from the bolt. Pull rearward and upward on the pistol grip to slide receiver cover and butt stock off mechanism housing.

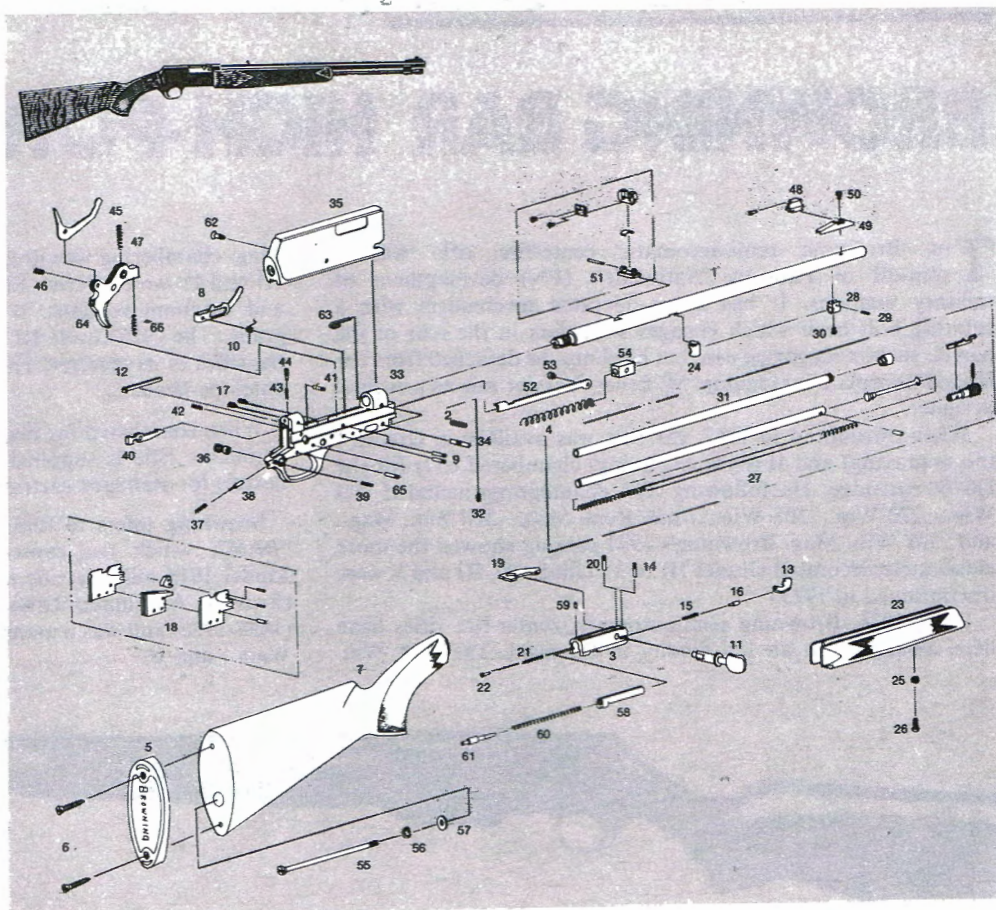


2. Remove the ejector bar (12) from the left side of the mechanism housing. Remove the striker spring (60) and guide (61) by pushing the guide forward until it can be lifted up and out of the housing.



## Parts Legend

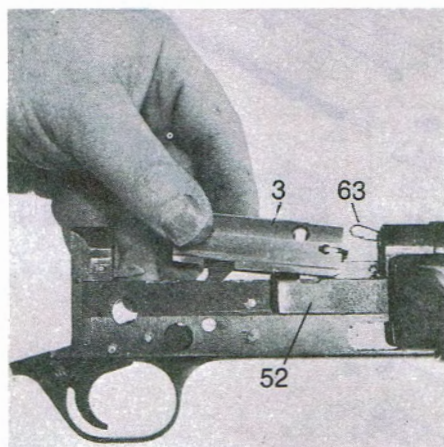
1. Barrel
2. Barrel pin
3. Bolt
4. Bolt return spring
5. Butt plate
6. Butt plate screw
7. Butt stock
8. Carrier
9. Carrier pin
10. Carrier spring
11. Cocking handle
12. Ejector bar
13. Extractor
14. Extractor pin
15. Extractor spring
16. Extractor spring follower
17. Feed guide retaining screw
18. Feed guide assembly
19. Firing pin ejector
20. Firing pin ejector pin
21. Firing pin ejector spring
22. Firing pin ejector spring follower
23. Forearm
24. Forearm bracket
25. Forearm escutcheon
26. Forearm screw
27. Magazine assembly
28. Magazine tube bracket
29. Magazine tube bracket pin
30. Magazine tube bracket screw
31. Magazine tube outer
32. Magazine tube retaining screw
33. Mechanism housing
34. Mechanism housing pin
35. Receiver cover
36. Safety
37. Safety spring
38. Safety spring follower
39. Safety spring pin
40. Sear
41. Sear pin
42. Sear stop pin
43. Sear spring
44. Sear spring screw
45. Sear lever
46. Sear lever pin
47. Sear lever spring
48. Sight front
49. Sight base front
50. Sight base screw front
51. Sight assembly rear
52. Slide arm
53. Slide arm stud
54. Slide arm weight
55. Stock bolt
56. Stock bolt lock washer
57. Stock bolt washer
58. Striker
59. Striker guide pin
60. Striker spring
61. Striker spring guide
62. Takedown screw
63. Top ramp
64. Trigger
65. Trigger pin
66. Trigger spring



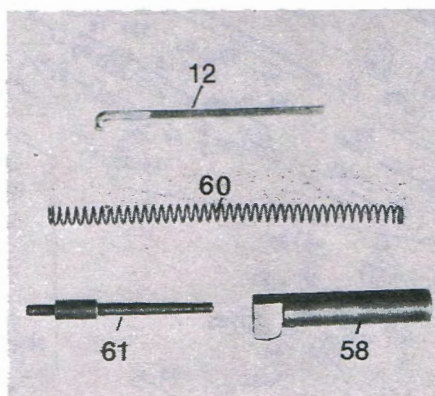
43. Sear spring
44. Sear spring screw
45. Sear lever
46. Sear lever pin
47. Sear lever spring
48. Sight front
49. Sight base front
50. Sight base screw front

51. Sight assembly rear
52. Slide arm
53. Slide arm stud
54. Slide arm weight
55. Stock bolt
56. Stock bolt lock washer
57. Stock bolt washer
58. Striker

59. Striker guide pin
60. Striker spring
61. Striker spring guide
62. Takedown screw
63. Top ramp
64. Trigger
65. Trigger pin
66. Trigger spring



3. Raise the rear end of the bolt (3) straight upward. A click will be heard when the bolt is released from the slide arm (52). The striker (58) will now fall out of the bolt.



4. Remove the top ramp (63) which guides the cartridges into the chamber by pulling it rearward. Further disassembly is not ordinarily required or recommended. Clean the action and parts with solvent. Then dry them and apply a very light coat of oil.

## Reassembly Instructions

Replace the top ramp (63) into the recess above the chamber. Insert the striker (58) into rear of the bolt and place the bolt face against the chamber end of the barrel. Pull the slide arm (52) rearward with a screwdriver and apply downward thumb pressure on the bolt until the slide arm engages the recess in the right side of the bolt.

Install the striker spring (60) and guide (61) with the shorter stud of the guide in the hole in the rear of the receiver. Replace the ejector bar (12) with the hooked end rearward.

Slide the receiver cover over the receiver until the cocking handle (11) can be inserted in the bolt through the ejection port. Fully replace the receiver cover and replace the takedown screw (62). Keeping this screw very tight helps to maintain telescope alignment with the barrel.



## BROWNING BAR HIGH-POWER RIFLE

THE Browning semi-automatic centerfire rifle was a spin-off of Fabrique Nationale's (FN) development of military weapons. It has a gas-operated mechanism with a rotating bolt head which engages shoulders in the rear of the barrel. Its box magazine can, but need not, be detached from the hinged floorplate for loading. M. Ernest Vervier was its principal designer.

When introduced in 1967, the rifle was available in Grades I (no engraving) and II (light engraving) chambered only for the .30-'06 cartridge. The following year, chamberings included .243 Win., .270 Win., .308 Win., 7 mm Rem. Mag., .300 Win. Mag., and .338 Win. Mag. Browning's 1971 catalog showed the more elaborately decorated Grades III to V. Grades II, III and V were discontinued in 1975.

Since 1976, Browning semi-automatic center-fire rifles have been assembled at an FN facility in Portugal. The .338 Win.

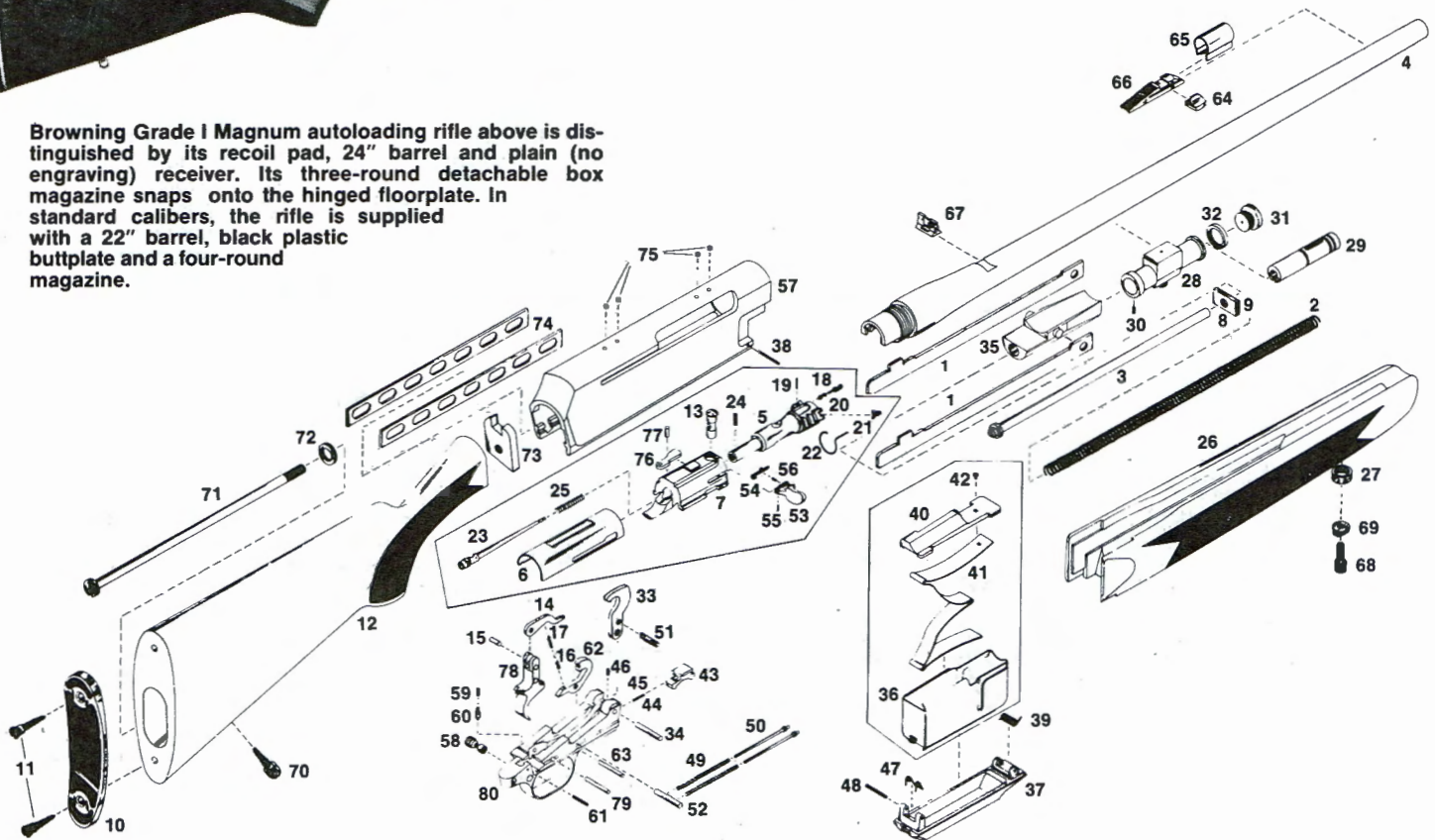
Mag. chambering was dropped at that time. In 1979, Grades I, III and IV were offered. Engraving differs between the standard and magnum versions. It also varies over the years within a grade. The 1979 Grade III depicts Bighorn rams and bull elk on the sides of its receiver. The original Grade III showed deer and antelope heads.

When chambered for magnum cartridges, the Browning semi-automatic rifle is supplied with a recoil pad and a 24" barrel. Barrels for standard cartridges are 22" long.

Browning refers to this semi-automatic hunting rifle as the "BAR", which has caused confusion with the selective-fire Model 1918 military rifle of that name. The Model 1918 BAR (Browning Automatic Rifle) was designed by John M. Browning (1855-1926) and was a mainstay weapon of U.S. troops in World Wars I and II.



Browning Grade I Magnum autoloading rifle above is distinguished by its recoil pad, 24" barrel and plain (no engraving) receiver. Its three-round detachable box magazine snaps onto the hinged floorplate. In standard calibers, the rifle is supplied with a 22" barrel, black plastic buttplate and a four-round magazine.





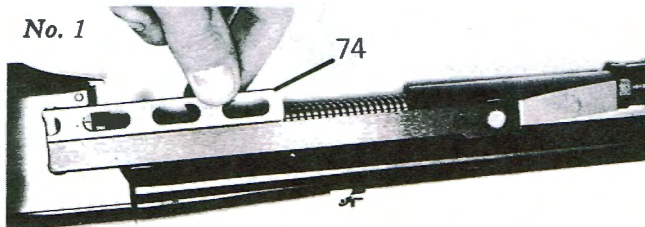
## Parts Legend

1. Action bar—right or left
2. Action spring
3. Action spring guide
4. Barrel
5. Bolt
6. Bolt cover
7. Bolt sleeve
8. Buffer
9. Buffer plate
10. Butt plate
11. Butt plate screws
12. Butt stock
13. Cam pin
14. Disconnecter
15. Disconnecter pin
16. Disconnecter spring
17. Disconnecter spring plunger
18. Ejector
19. Ejector retaining pin
20. Ejector spring
21. Extractor
22. Extractor spring
23. Firing pin
24. Firing pin retaining pin
25. Firing pin spring
26. Forearm
27. Forearm escutcheon
28. Gas cylinder
29. Gas piston
30. Gas piston stop pin
31. Gas regulator
32. Gas regulator gasket
33. Hammer
34. Hammer pin
35. Inertia piece
36. Magazine body
37. Magazine floorplate
38. Magazine floorplate pivot pin
39. Magazine floorplate spring
40. Magazine follower
41. Magazine follower spring
42. Magazine follower rivet
43. Magazine latch
44. Magazine latch spring
45. Magazine latch spring plunger
46. Magazine latch stop pin
47. Magazine retaining spring
48. Magazine retaining spring pin
49. Mainspring—right or left
50. Mainspring guide—right or left
51. Mainspring pin—hammer
52. Mainspring pin—trigger guard
53. Operating handle
54. Operating handle lock
55. Operating handle lock pin
56. Operating handle lock spring
57. Receiver
58. Safety cross-bolt
59. Safety spring
60. Safety spring plunger
61. Safety spring retaining pin
62. Sear
63. Sear pin
64. Sight bead, front
65. Sight hood, front
66. Sight ramp, front
67. Sight assembly, rear
68. Sling eyelet, front
69. Sling eyelet washer
70. Sling eyelet, rear
71. Stock bolt
72. Stock bolt washer
73. Stock bolt plate
74. Support rail—right or left
75. Telescope mount filler screws
76. Timing latch
77. Timing latch retaining pin
78. Trigger
79. Trigger pin
80. Trigger guard

Reliable functioning of the mechanism requires that the gas system be kept clean. The following procedure is recommended:

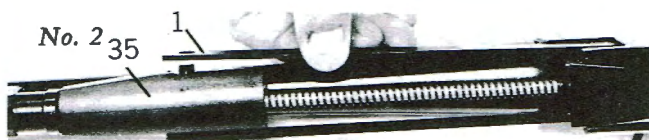
Close the magazine floorplate and pull the operating handle (53) rearward until the bolt locks in its open position. Remove the front sling eyelet (68) with small wrench. Grasp the forward end of the forearm (26) and pull it away from the barrel carefully until resistance is felt. Then slide the forearm forward and off.

No. 1

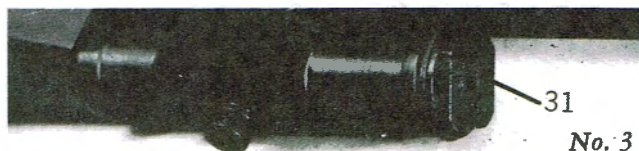


Close the bolt and pull the support rails (74) forward from their slots in the receiver (No. 1). The action bars (1) are removed by pulling their forward ends away from the round connecting studs on the inertia piece (35), forward out of the receiver (No. 2).

No. 2

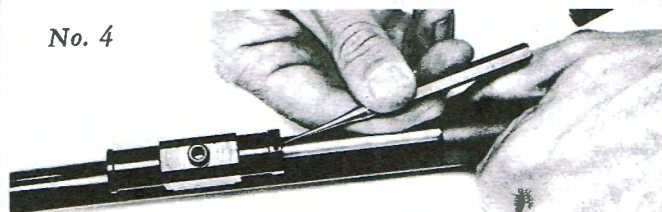


Remove gas regulator (31) from the front end of the gas cylinder (No. 3) with a 1/4" wrench. The gas regulator will be very securely tightened in the gas cylinder, and care must be taken to engage the wrench securely.



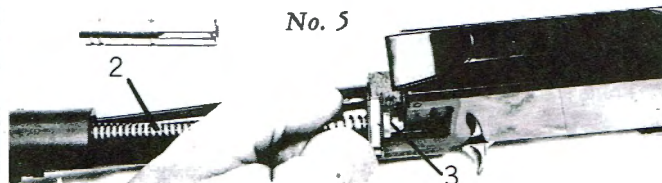
Pull the inertia piece back toward the receiver until rear face of the gas piston (29) can be pushed forward out of the gas cylinder with a small punch (No. 4). An extremely dirty gas system may require driving the gas piston forward with a hammer and drift punch. Extreme care must be used to avoid scoring the parts. If the gas piston will not move with moderate force, put nitro-solvent around the piston, wait about 15 minutes, and try to push it out with the drift punch. If the piston still will not move, put more nitro-solvent on it and allow it to set overnight.

No. 4



Grasp the receiver and pull the action spring guide (3) forward toward gas cylinder until it is clear of its recess in the receiver. The rear end of the action spring guide can then be moved to one side (No. 5), then rearward to remove it with the action spring (2) and inertia piece.

No. 5



Residues in the gas cylinder and on the gas piston should be thoroughly removed with nitro-solvent or bore cleaner. Heavy residues can be removed by scrubbing the gas cylinder with a 20-ga. bronze wire bore brush and solvent. The gas piston, gas cylinder, and other parts of the gas system should be wiped with a very lightly oiled cloth after cleaning. The gas cylinder interior and the gas piston should not be oiled beyond this.

Reassembly is the reverse of the disassembly procedure. The action spring, action spring guide, and inertia piece are replaced first. The gas piston is then placed into the front of the gas cylinder and pushed rearward over the end of the action spring guide. The small guide pin at the rear of the gas cylinder must be engaged in the lengthwise groove on the rear of the gas piston. If properly oriented in the gas cylinder, the gas piston may be pushed partially out of the rear of the cylinder when the inertia piece is pulled rearward.

The gas regulator is then screwed into the front of the gas cylinder. It must be very securely tightened with the wrench.

The action bars and support rails are replaced next. The projecting section of each action bar is carefully placed in its corresponding slot in the bolt before the hole in its forward end is placed over the stud on the inertia piece. It may be necessary to pull the inertia piece slightly rearward to engage the action bars. The support rails are then installed.

Reassembly is completed by locking the bolt in its open position and replacing the forearm. Be very careful, since it can be split if forced into position incorrectly. It is retained by replacing the front sling eyelet. Further disassembly is not required for ordinary cleaning. A buffer plate and magazine latch spring plunger will be found only on rifles of early production.

To remove the bolt assembly and firing mechanism, take off the forearm, support rails and action bars as previously described. Close the bolt. Then remove the buttplate (10) and unscrew the stock bolt (71) to take off the butt stock (12).

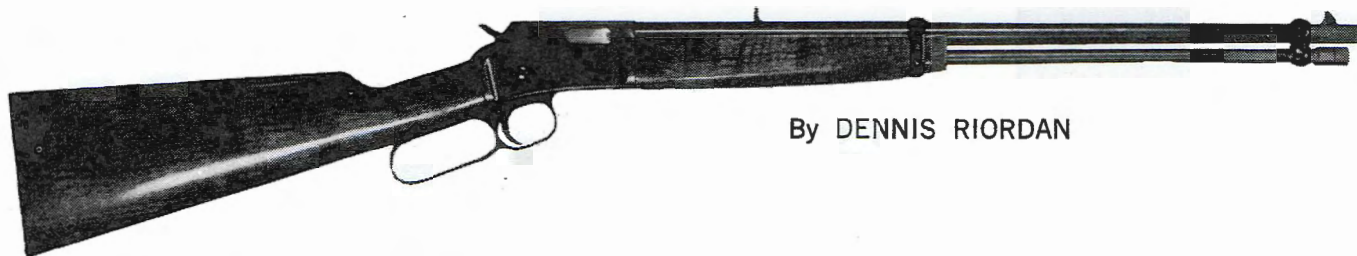
Screw the stock bolt into the stock bolt plate (73). Using the stock bolt as a handle, slide the stock bolt plate up out of engagement with the trigger guard. Then tilt the plate up into the receiver and pull it out rearward. The trigger guard assembly will then slide out straight to the rear.

Pull the operating handle rearward until the bolt locking lugs are visible. Slide the bolt cover (6) forward until it covers the rearmost locking lug. Holding the bolt assembly in place, pull the operating handle lock (54) outward. Then slide the operating handle forward and pull it out through the slot in the bolt cover. The bolt assembly is then removed by sliding it to the rear of the receiver, then downward. The bolt cover is removed by sliding it to the rear of the assembly and lifting the side of the cover having the slot for the operating handle.

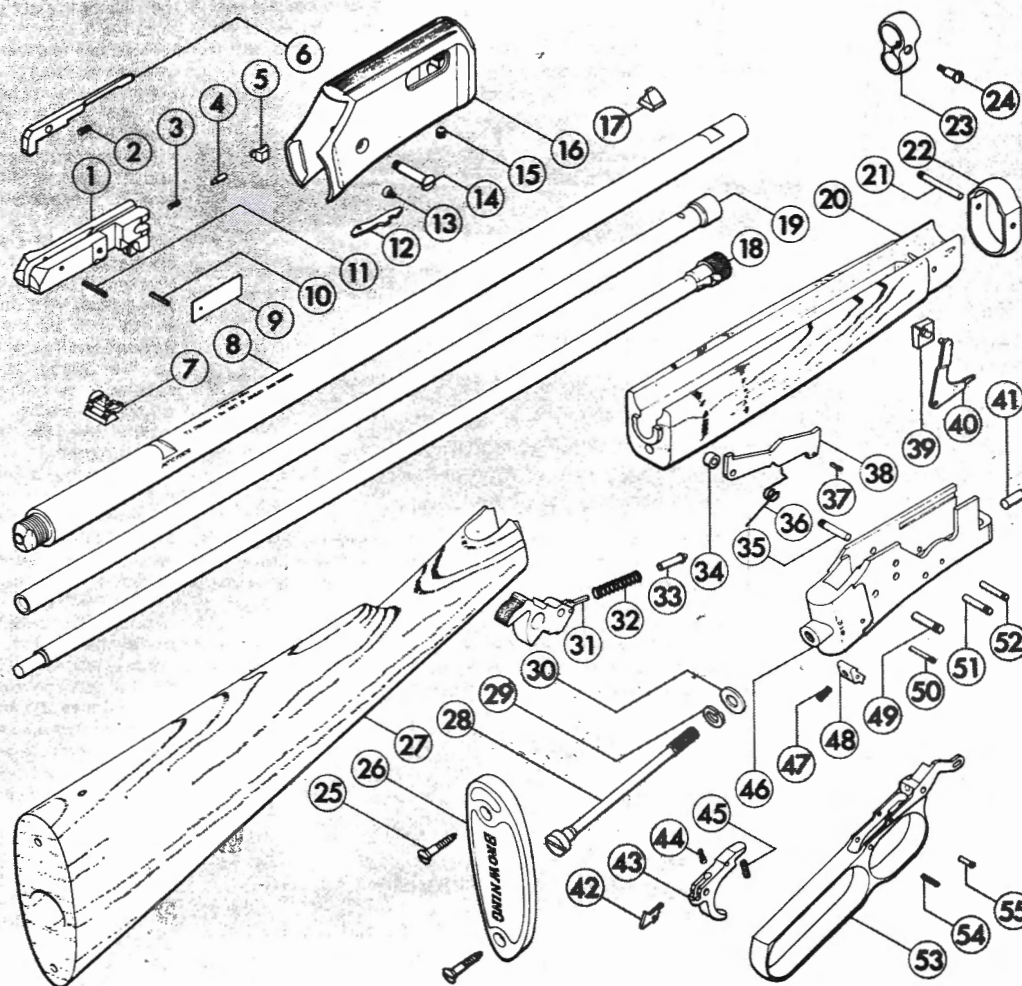
Further disassembly is not recommended.



# BROWNING BL-22 RIFLE



By DENNIS RIORDAN



## Parts Legend

- |                              |                                   |                                 |                            |
|------------------------------|-----------------------------------|---------------------------------|----------------------------|
| 1. Bolt                      | 15. Magazine tube retaining screw | 29. Stock bolt lock washer      | 42. Sear link              |
| 2. Firing pin spring         | 16. Receiver                      | 30. Stock bolt washer           | 43. Trigger                |
| 3. Extractor spring          | 17. Front sight                   | 31. Hammer and mainspring guide | 44. Sear link spring       |
| 4. Extractor plunger         | 18. Magazine assembly             | 32. Mainspring                  | 45. Trigger spring         |
| 5. Extractor                 | 19. Outer magazine tube           | 33. Mainspring follower         | 46. Frame                  |
| 6. Firing pin                | 20. Forearm                       | 34. Carrier spacer              | 47. Sear spring            |
| 7. Rear sight assembly       | 21. Forearm band pin              | 35. Carrier pin                 | 48. Sear                   |
| 8. Barrel                    | 22. Forearm band                  | 36. Carrier spring              | 49. Hammer pin             |
| 9. Bolt cover plate          | 23. Muzzle clamp                  | 37. Carrier guide pin           | 50. Sear pin               |
| 10. Bolt actuating pin       | 24. Muzzle clamp screw            | 38. Carrier                     | 51. Cocking lever pin      |
| 11. Firing pin retaining pin | 25. Buttplate screw (2)           | 39. Locking block               | 52. Cocking lever link pin |
| 12. Ejector                  | 26. Buttplate                     | 40. Cocking lever link          | 53. Cocking lever          |
| 13. Ejector spring           | 27. Buttstock                     | 41. Frame insert pin            | 54. Sear link pin          |
| 14. Action screw             | 28. Stock bolt                    |                                 | 55. Trigger pin            |

**B**ROWNING Arms Co. added the BL-22 lever-action .22 caliber repeating rifle to its line of sporting arms in 1969. Generally similar in appearance to Winchester lever-action repeaters developed by John M. Browning in the late 1800's, this small-game and plinking rifle is produced for Browning in Japan. It weighs only about five lbs., and fires .22 long rifle, long, and short regular and high speed cartridges interchangeably, without adjustment. Capacity of its tubular under-barrel magazine is 15 long rifles, 17 longs, and 22 shorts.

An outstanding feature of this compact repeater is its short lever throw of only 33°, which makes for easy, rapid

operation. Another excellent feature is that the trigger is mounted on the lever, and moves with it. This prevents the user's finger from being pinched between the lever and the trigger.

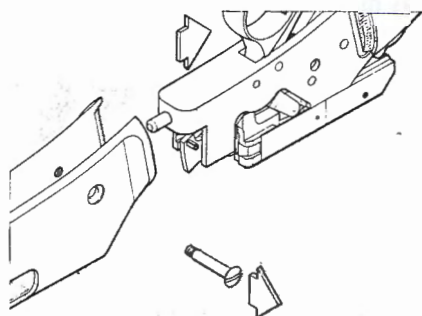
Of exposed type, the hammer has a half-cock notch designed to catch the hammer if it slips from the grasp when the rifle is being thumb cocked. The half-cock is not intended as a position of rest while handling or storing the rifle. The manufacturer suggests that the hammer be placed in fired position when the rifle is carried or stored.

Cartridge cases are ejected through a small port in the right of the receiver. This permits low mounting of a tele-

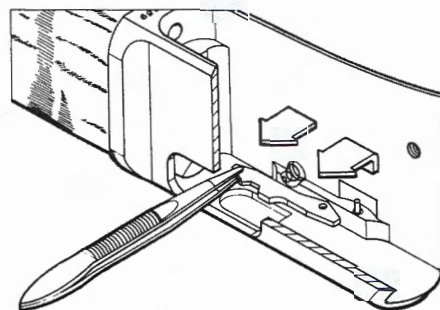
scope sight, and the receiver top is grooved for attaching a clamp-on telescope sight mount. Open sights on the barrel consist of a folding U-notch rear sight, adjustable for elevation, and a bead front sight.

Most exposed metal parts of this handsome rifle have a high-luster blue finish that contrasts nicely with the gloss-finished walnut buttstock and forearm. The black plastic buttplate bears the name "BROWNING".

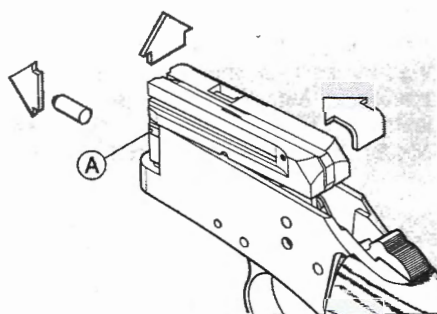
There are two grades of this rifle. Grade I lacks engraving or checkering, and Grade II has hand engraving on the receiver, gold-plated trigger, and checkered buttstock and forearm. ■



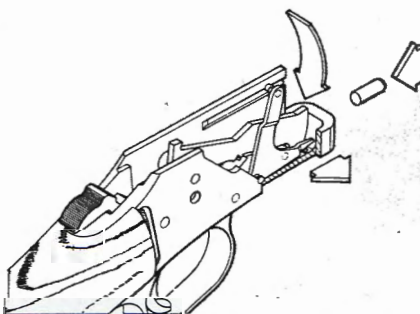
**1** After removing magazine assembly (18) and checking to see that no cartridges are in rifle, begin disassembly of the BL-22 over a clean, well-lighted bench. Open cocking lever (53) and remove action screw (14). Turn rifle upside down, and pull buttstock (27) and action assembly straight back out of receiver (16).



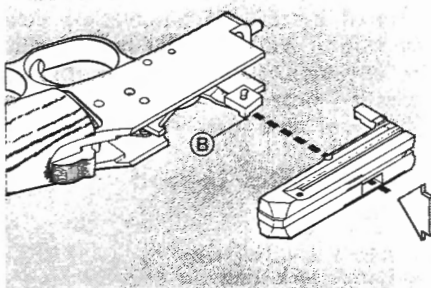
**2** Working through the ejection port with a tweezers, lift ejector (12) from its fixed receiver pin, and remove. Then, draw ejector spring (13) straight out of its receiver seat.



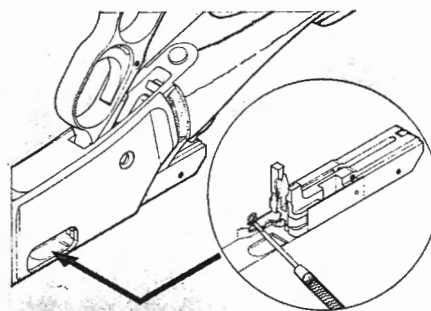
**3** The frame insert pin (41) may come out with frame (46) or stick in its hole in the receiver. If loose, remove the pin so that it is not lost. Close cocking lever. Then lift rear of bolt (1) slightly and push forward until lug "A" emerges from front of frame. Lift off bolt, and remove locking block (39) from cocking lever link (40). Push front end of carrier (38) slightly to the left, and allow it to swing up on its spring. All working parts are now exposed for cleaning and lubrication. Do not lower hammer (31) while action is out of receiver. Disassemble further only for repair. Drift out solid pins so that they emerge serrated ends first.



**4** Begin reassembly by seating flat end of frame insert pin in its frame socket. Pivot carrier downward into frame, and move to the right, catching carrier guide pin (37) beneath tail of cocking lever link.

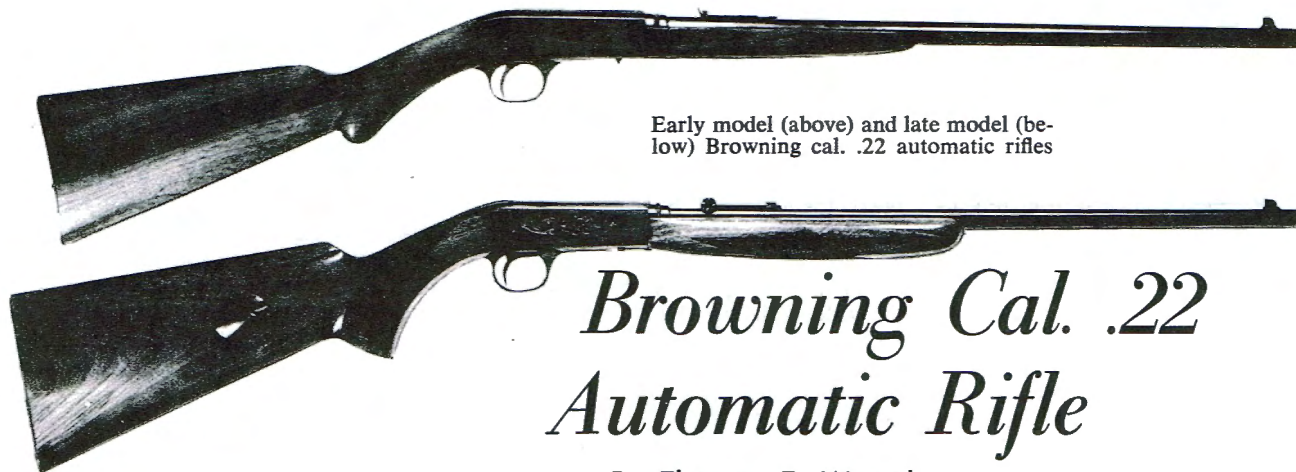


**5** Turn right side of frame down, and place locking block over stud on cocking lever link, locating small triangular section of block "B" down and toward hammer. Install bolt over locking block, guiding block into its well within bolt. Start bolt lug into its frame groove, and slide bolt to the rear until it clears carrier hook and can be brought flush with frame. Then, open cocking lever fully.



**6** Insert ejector spring and ejector in receiver, positioning them as shown in illustration 2. Place action assembly in rear of receiver, sliding it forward on the bolt in a straight line. Tip of ejector spring must bear squarely on side of ejector. If necessary, position spring with a small screwdriver, working through ejection port. When action is fully home, replace action screw.





Early model (above) and late model (below) Browning cal. .22 automatic rifles

# Browning Cal. .22 Automatic Rifle

By Thomas E. Wessel

IN 1914 the Belgian firm of Fabrique Nationale began production of a cal. .22 rifle designed in 1913 by John M. Browning. This rifle was semi-automatic with straight blowback-operated breech. Of hammerless construction, it had a tubular magazine in the buttstock. Top and sides of the receiver were completely enclosed. Ejection of fired cases was from bottom

of the receiver. It was readily taken down for cleaning or storage.

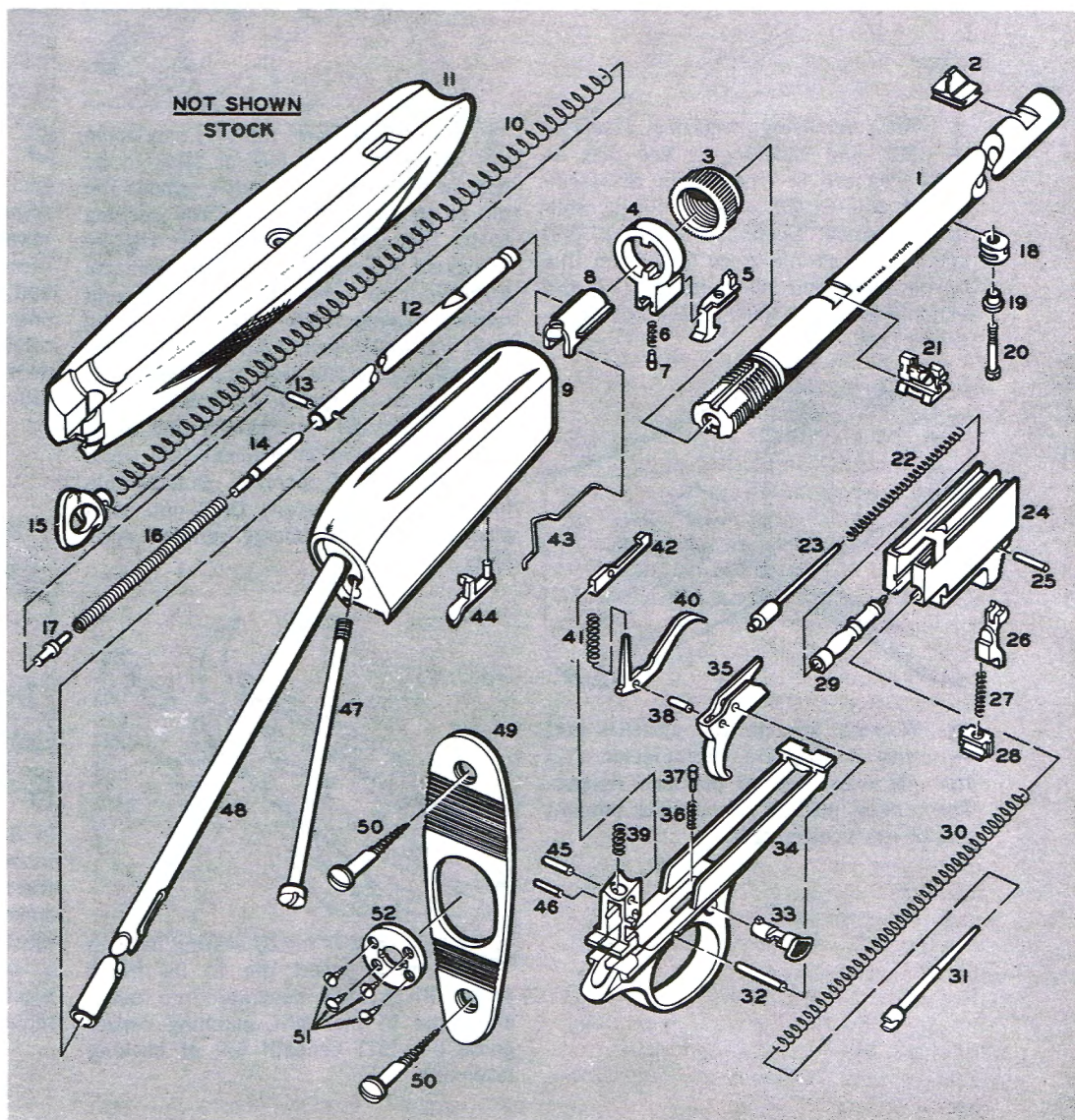
In 1922 Remington Arms Co., Ilion, N. Y., began production of a similar rifle under license arrangement with FN. Designated Model 24, it had a loading port in the right side of the buttstock, but was otherwise mechanically similar to the FN rifle. The Model 24 had a 19" barrel and was

chambered for both cal. .22 short and long rifle cartridges and was offered in several grades, and a special version was made for use in commercial shooting galleries.

The Model 24 was discontinued in 1935 to be replaced that year by the Model 241. The Model 241 had a larger forearm and buttstock which made it more suitable for adult use.

## Parts Legend

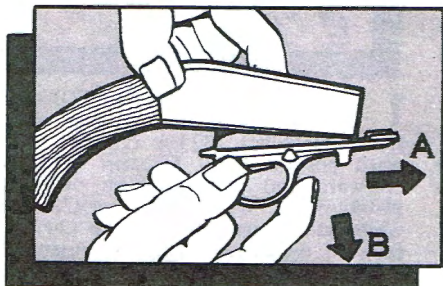
1. Barrel
2. Front sight
3. Barrel adjusting ring
4. Barrel lock ring
5. Barrel lock
6. Barrel lock spring
7. Barrel lock spring plunger
8. Cartridge guide
9. Receiver
10. Magazine spring
11. Forearm
12. Inner magazine tube
13. Magazine handle pin
14. Magazine follower
15. Magazine handle
16. Magazine follower spring
17. Magazine follower stop
18. Forearm retaining stud
19. Forearm escutcheon
20. Forearm screw
21. Rear sight
22. Firing pin spring
23. Firing pin spring guide
24. Breechblock
25. Extractor spring retaining pin
26. Extractor
27. Extractor spring
28. Extractor spring retainer
29. Firing pin
30. Recoil spring
31. Recoil spring guide
32. Trigger pin
33. Safety, cross-bolt
34. Trigger guard
35. Trigger
36. Safety spring
37. Safety spring plunger
38. Disconnecter pin
39. Sear spring
40. Disconnecter
41. Trigger spring
42. Sear
43. Cartridge guide spring
44. Cartridge stop
45. Sear spring pin
46. Sear pin
47. Stock screw
48. Outer magazine tube
49. Buttplate
50. Buttplate screw (2)
51. Magazine stop plate screw (4)
52. Magazine stop plate



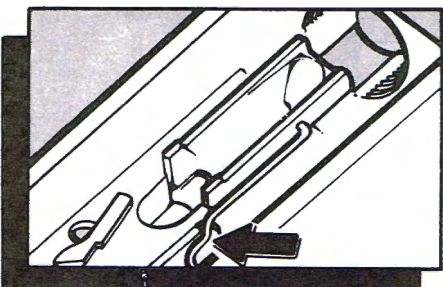


Barrel length was increased to 24" to effect an improvement in balance. The action was adapted for both standard and high-velocity cal. .22 short and long rifle cartridges, and like the Model 24 was available in several grades as well as a gallery model. Production of the Model 241 ceased in 1951.

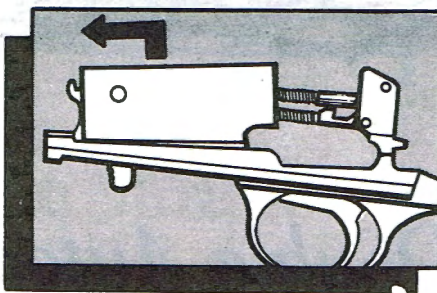
In the interim the FN firm had maintained almost continuous production of the basic 1914 model. In 1956 an improved model was introduced by FN which bears a strong resemblance to the Remington Model 241. The magazine loading port is in the side of the buttstock, and both forearm and buttstock are large enough for adult use. Barrel length is 19½", and it is available in both .22 short and .22 long rifle chamberings. Several grades are offered, including a gallery model.



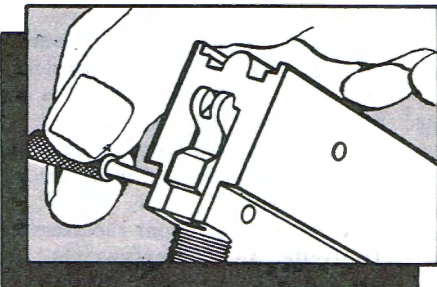
**1** To remove barrel and forearm assembly from receiver, hold rifle upside down and push barrel lock (5) forward. Then draw breechblock (24) back ¼" or more by the finger piece and hold with thumb of one hand. Give barrel a ¼-turn clockwise and separate the 2 assemblies. To accomplish further disassembly of Browning .22 automatic rifle, remove inner magazine tube (12) and assembly by turning magazine handle (15) ¼ turn and withdrawing assembly to rear until it catches against magazine stop plate (52). Give assembly ¼-turn again and withdraw it from stock. Next, push trigger guard (34) forward about ¾" (A), retract breechblock (24) with forefinger and hold in its rearward position, then pull rear end of trigger guard out of receiver (B) about 1" and draw mechanism out and away



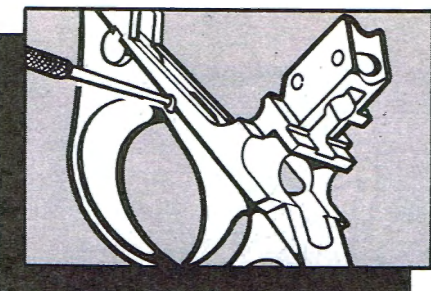
**2** Remove stock screw (47) and stock. Place blade of a screwdriver against rear of cartridge guide spring (43) and pry spring out of cartridge guide slot in receiver (9). Slide cartridge guide (8) out of front end of receiver. Using thin-nosed pliers, grasp front end of cartridge stop (44) and lift it out of receiver



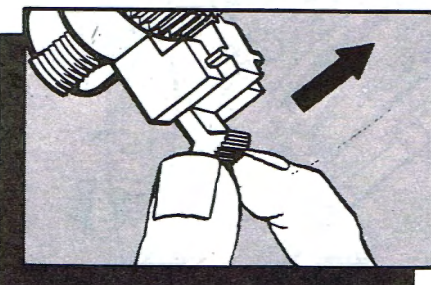
**3** Continue by pulling trigger (35) to release firing pin (29). Lift breechblock out of trigger guard and allow it to move slowly forward to prevent escape of recoil spring (30) and firing pin spring (22). When breechblock is out, firing pin, firing pin spring guide (23), firing pin spring, recoil spring, and recoil spring guide (31) may be lifted away



**4** Drift out extractor spring retaining pin (25) and remove extractor (26), extractor spring (27), and extractor spring retainer (28)



**5** Next, drift out sear spring pin (45) from left to right and remove sear spring (39). Drift out sear pin (46), also from left to right, and slide sear (42) out of its housing to front. Drift out trigger pin (32) from left to right and remove trigger and disconnect (40) through top of trigger guard. Drift disconnect pin (38) from left to right out of trigger



**6** Remove forearm screw (20) and forearm (11). Slide barrel lock (5) forward and away. Barrel lock spring (6) and barrel lock spring plunger (7) can now be removed from barrel lock ring (4). Using a leather or plastic mallet, tap off barrel lock ring and unscrew barrel adjusting ring (3). Reassemble in reverse order ■

## A MAN TO REMEMBER

WILLIAM W. RICHARDS

*Made Fine Guns  
and Experimented with the  
Percussion Ignition System*

Born — Birmingham, England,  
1788  
Died—1865



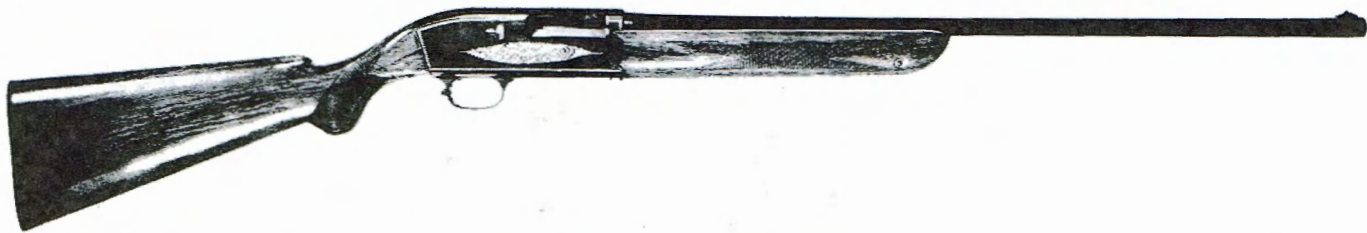
**W**ILLIAM WESTLEY RICHARDS was born of a family of silversmiths and merchants, and learned early how to organize production and to merchandise his wares. In 1812, at the age of 24, he opened his first shop at 82 High St. in the city of Birmingham, a thriving gunsmithing community. At that time such guns as were proved in Birmingham were tested irregularly in private establishments. Richards opposed this practice and quickly became active with other gunsmiths in petitioning Parliament for the establishment of an official proof house at Birmingham. The petitioners were successful. An official Birmingham proof house was established in 1813, and extra-legal proving was rigorously suppressed.

Richards' first products were largely high-quality flintlock fowling pieces. Richards was enough of a merchant to realize he needed a London outlet if he were to tap the best market for such guns. Accordingly in 1815 he opened a store at 170 Bond St., under the supervision of William Bishop, which soon became the fashionable sporting headquarters for the capital.

Richards had much interest and ability in the developmental side of firearms engineering. He was one of the first to obtain a license to manufacture the Forsyth lock. He invented and patented a pill lock of his own in 1821, and made several improvements in detonating pills, tubes, and percussion caps. He was one of the first to use tin foil inside the cap to protect the detonating charge, and he even advertised that one of his guns could be fired under water with a specially sealed primer. Among other inventions was a flip-up tangent sight which was adopted by the British army.

Richards remained as active head of his firm until 1855 when he was succeeded by his son, Westley Richards.—HAROLD L. PETERSON.





# Browning Double Automatic Shotgun

By Thomas E. Wessel

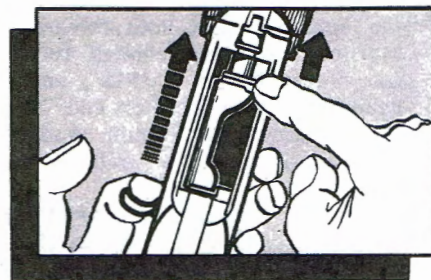
THE Browning 12-ga. Double Automatic shotgun, introduced early in 1955, was designed by Val M. Browning, son of firearms inventor John M. Browning. Manufactured by Fabrique Nationale in Belgium, this gun is designated Double Automatic because it will hold only 2 shells and is self-loading (semi-automatic). Unlocking of the breech is accomplished by an inertia block housed in a tube in the buttstock. Rearward movement of the barrel in recoil is only about  $\frac{7}{8}$ ". All types of  $2\frac{3}{4}$ " factory loads, including  $2\frac{3}{4}$ " Magnum, can be fired without adjustment.

Initially the Double Automatic was offered in Standard model weighing 7

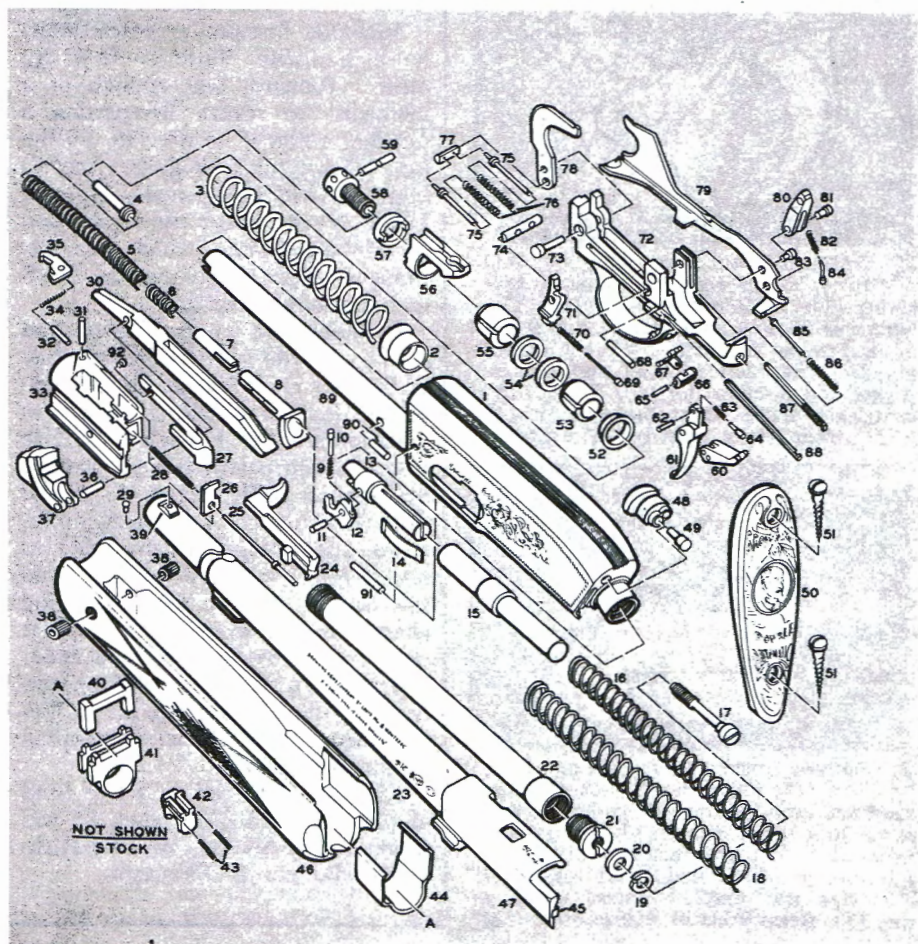
lbs. 11 ozs. and a lighter Twelvette model weighing 6 lbs. 14 oz. The weight saving in the Twelvette model was obtained through use of an aluminum-alloy receiver.

A new version with aluminum alloy receiver, designated Twentyweight, was first offered in 1956. Its name is derived from the fact that its nominal weight of only 6 lbs. with  $26\frac{1}{2}$ " plain barrel is comparable to that of the ordinary 20-ga. shotgun.

Anodized aluminum receivers of the Twelvette and Twentyweight models can be had in several color combinations, and all models have decorative hand-engraved panels on sides of the receivers.



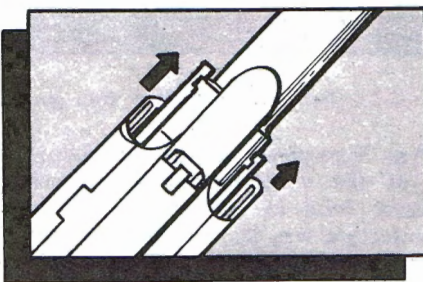
**1** Commence disassembly of Browning Double Automatic by first insuring that breechblock (33) is retained in rearward position. Pull forearm latch (42) rearward and press forearm (46) completely down. Withdraw barrel (23). Next, while holding operating handle (24), push forward on carrier latch (8), then allow breechblock to move gently forward



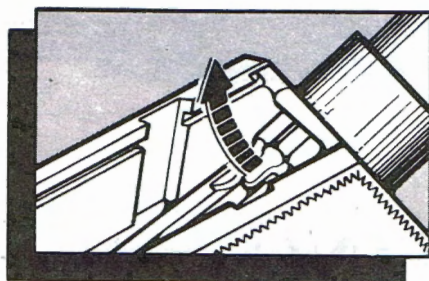
## Parts Legend

1. Receiver
2. Friction brake, bronze buffer
3. Recoil spring
4. Forearm pivot pin stop
5. Carrier latch spring
6. Carrier latch stabilizer spring
7. Carrier latch stabilizer
8. Carrier latch
9. Link hook spring
10. Link hook spring plunger
11. Link hook pin
12. Link hook
13. Inertia block core
14. Inertia block core spring
15. Inertia block
16. Action spring, inside
17. Stock bolt
18. Action spring, outside
19. Stock bolt lock washer
20. Stock bolt washer
21. Action spring tube cap
22. Action spring tube
23. Barrel
24. Operating handle
25. Firing pin
26. Firing pin stop plate
27. Locking block latch
28. Firing pin spring
29. Sight bead
30. Link
31. Extractor pin
32. Extractor spring guide
33. Breechblock
34. Extractor spring
35. Extractor
36. Link pin
37. Locking block
38. Forearm escutcheon (2)
39. Sight base\*
40. Barrel lock
41. Barrel lock guide

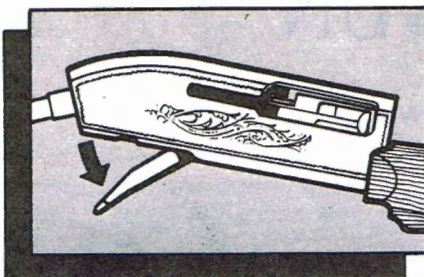




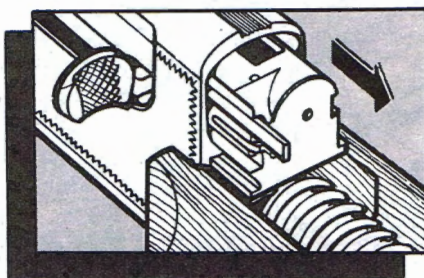
**2** Remove buttplate screws (51), buttplate (50), and stock bolt (17). Remove stock rearward and away from receiver (1). Insert a small screwdriver into rear of receiver and engage notch at rear inside of each trigger guard fastening guide (87) and (88). Withdraw guides a short distance with screwdriver (a button hook also serves well for this) so they may be pulled completely out with pliers. Remove trigger guard (72) from receiver. In reassembling, care should be exercised to replace short fastening guide on right side and long one on left, with notches of each facing inward



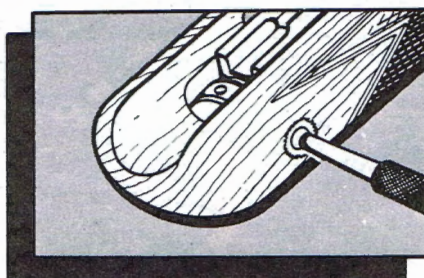
**3** Turn gun over and unhook inertia block (15) from link (30) and push inertia block rearward and rotate it slightly. It will 'hook' to receiver



**4** Link may now be swung on its pivot [link pin (36)] so that rear end swings out of receiver. Place rear of forearm down (in barrel unlatching position)



**5** Remove breechblock assembly through front of receiver, leaving operating handle (24) inside receiver. Now lift away operating handle



**6** To dismount recoil mechanism, drift out forearm pivot pin (59) and remove forearm. Unscrew adjusting cap (58), using care that carrier latch spring (5) and forearm pivot pin stop (4) do not flip away when cap is unscrewed. At this point, other disassembly is immediately obvious. Reassemble the gun in reverse order. When re-installing friction brake bronze, anterior (55) insure that smaller diameter portion is facing front

- 42. Forearm latch
- 43. Forearm latch spring (2)
- 44. Forearm plate
- 45. Ejector\*
- 46. Forearm
- 47. Barrel extension\*
- 48. Breechblock buffer
- 49. Breechblock buffer pin  
(found on early production guns only)
- 50. Buttplate
- 51. Buttplate screw (2)
- 52. Friction brake ring
- 53. Friction brake bronze, posterior
- 54. Friction brake washer (2)
- 55. Friction brake bronze, anterior
- 56. Barrel guide
- 57. Orienting ring
- 58. Adjusting cap
- 59. Forearm pivot pin
- 60. Disconnecter
- 61. Trigger
- 62. Disconnecter pin
- 63. Disconnecter spring
- 64. Disconnecter spring plunger
- 65. Safety retaining pin
- 66. Safety finger piece
- 67. Safety spring
- 68. Trigger pin
- 69. Sear spring guide
- 70. Sear spring
- 71. Sear
- 72. Trigger guard
- 73. Hammer pin
- 74. Sear pivot
- 75. Mainspring guide (2)
- 76. Mainspring (2)
- 77. Mainspring yoke
- 78. Hammer
- 79. Carrier
- 80. Carrier dog
- 81. Carrier dog pin
- 82. Carrier dog spring
- 83. Carrier pin
- 84. Carrier dog spring guide
- 85. Carrier spring guide
- 86. Carrier spring
- 87. Trigger guard fastening guide, right
- 88. Trigger guard fastening guide, left
- 89. Recoil spring tube\*
- 90. Carrier latch guide pin
- 91. Recoil spring tube pin
- 92. Locking block latch rivet

\* Factory assembled to other major part. Do not disassemble.

## Storing Guns

*I am going overseas for a long period and must store my guns. How can I protect them from rust during this period?*

**Answer:** The first steps in preparing a gun for long-term storage are to unload it and give it a thorough cleaning. All fouling should be removed from the bore and chamber, and fingerprints wiped from exterior surfaces.

The amount of protection needed will vary with the climate, but to be safe the gun should be prepared so that it will not rust during long periods of high temperature and humidity. Even in normally dry climates, periods of high humidity can sometimes occur.

Several storage methods can be employed. The cleaned metal parts of an arm may be coated with a rust-inhibiting grease or a paste wax as used on floors and auto bodies. When wax is applied, it should not be buffed but left to dry as is (paste wax is easily removed with many common solvents).

Chemical rust inhibitors and silica gel (which absorbs atmospheric moisture) give good protection from rust without the necessity of applying either oil or grease to metal parts.

Chemical vapor corrosion inhibitors release a vapor which surrounds metal parts to exclude moisture-laden air. These vapor inhibitors, sold under such names as VPI and VCI, are supplied in the form of treated paper, crystals, or in spray applicators. However, these chemicals have a harmful effect on some stock woods and stock finishes. Thus, it may be desirable to remove stocks and store them separately from metal parts.

Guns stored in a closed gun cabinet can be protected with a special electric heater or with a 25-watt electric light bulb placed in the bottom of the gun cabinet. These heat-producing devices keep the atmosphere in the cabinet warmer than the surrounding air, and thus above the dew point, to prevent condensation of moisture on guns.

Guns may also be stored in sturdy wood or corrugated paper boxes. Wood is preferred if the guns are to be moved about while in storage. In either case, guns should be blocked in place to prevent movement when the box is moved, and the boxes should be sealed tightly. Tight sealing helps prevent entrance of damp air and the escape of the corrosion inhibiting vapors. Efficient sealing can be obtained by taping all box joints with masking tape.

Guns should not be stored in untreated sheepskin or fabric gun cases for long periods of time, as such cases may attract moisture and cause rusting.

Boxed guns should be stored in areas where they are least likely to be subjected to extremes in temperature and humidity. A clothes closet often meets this requirement. Attics are usually subject to extremes of temperature and humidity and are a poor storage area.—E.W.H.





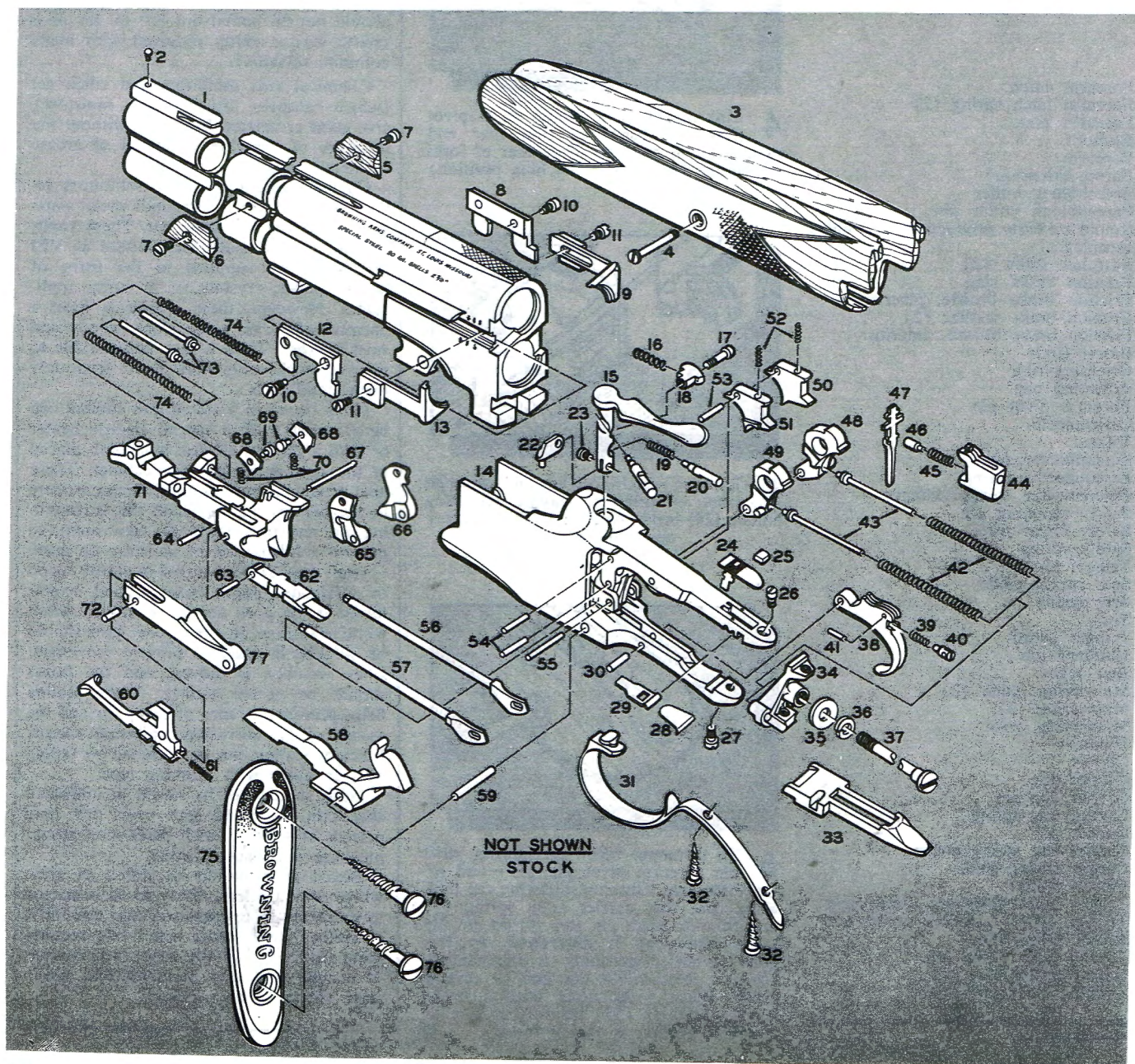
Browning Broadway trap gun

# BROWNING SUPERPOSED SHOTGUN

By Thomas E. Wessel

THE Superposed was the last product of the world-famous small-arms designer John M. Browning, and its manufacture was just beginning at the time of Browning's death in 1926. It has proved to be one of the most successful guns of its kind.

Unique, original design features of the Superposed are the single under-bolt, the fore-end which remains attached to the barrels when the gun is taken down, and the trigger. The gun was originally made with the conventional 2 triggers. These were replaced by a "Twin-Single" trigger, a most unusual arrangement of 2 triggers which could be used as conventional triggers

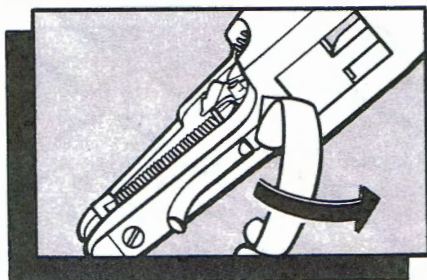




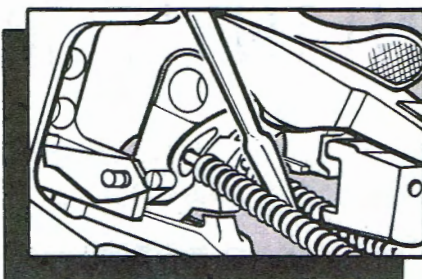
or either of them as a single trigger. Eventually a single trigger was standardized in which selection of the barrel to be fired is made by moving the safety slide to one side or the other.

The gun has always been made with automatic ejectors.

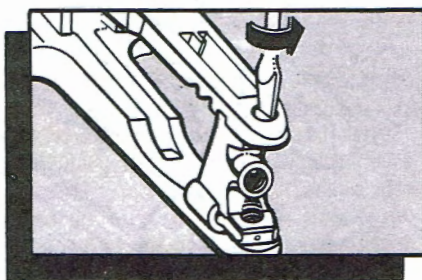
The Browning Superposed is offered by the Browning Arms Co., Morgan, Utah, in 12-, 20-, and 28-ga. and .410-bore, in a variety of styles, weights, and grades with accessories.



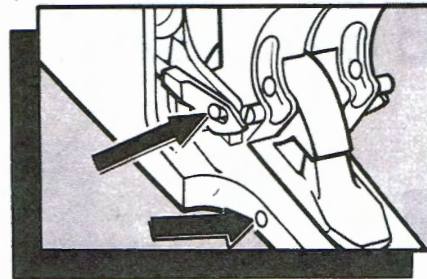
**1** Turn gun bottom side up, press back and lift up takedown lever latch (60). Turn gun right side up and push forward on forearm (3), then unlock gun by pushing top-lever (15) right. Lower buttstock and remove barrels (1) from receiver (14). Remove front and rear trigger guard screws (32), buttplate screws (76), and buttplate (75). Using long screwdriver, remove stock bolt (37) together with lockwasher (36) and washer (35). Remove stock. Continue by turning trigger guard (31) one-quarter turn right (see arrow), lift up and away



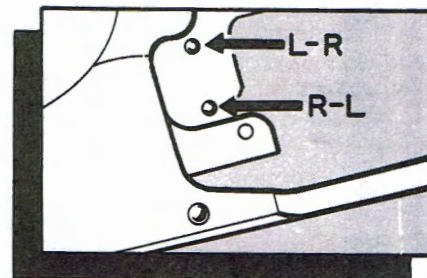
**2** With receiver placed solidly on bench, reach through action with screwdriver to mainspring (42) on far side. Raise mainspring out of its socket in hammer (48 or 49), using near mainspring as fulcrum. Push directly down on mainspring guide (43) and slide it off edge of hammer. Turn action over and repeat for corresponding parts except use locking bolt (33) as fulcrum



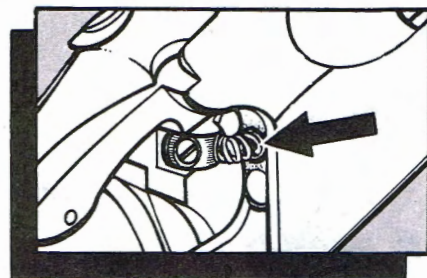
**4** Continue by removing top and bottom tang-piece screws (26 and 27, see arrow) and, using a plastic hammer, drive out tang piece from left or right



**3** Drift out trigger pin (30, lower arrow) and pull trigger (38) downward out of trigger slot in receiver. Hold inertia block (44) with one hand and pull trigger with other. Inertia block will rise off top of connector (47), and both trigger assembly and inertia block may be removed. Drift out hammer pin (55, upper arrow) and remove both hammers (48 and 49) and both ejector trip rods (56 and 57) from receiver. Raise selector spring (29) out of its slot using a thin knife blade and rotate it one-quarter turn either right or left, then remove selector safety (24) and block (25) as a unit



**5** Drift out over firing pin retaining pin (54, upper arrow) from left to right and remove over firing pin (21). Turn receiver over and repeat for under firing pin retaining pin (54, lower arrow) from right to left. Remove under firing pin (20) and under firing pin spring (19)



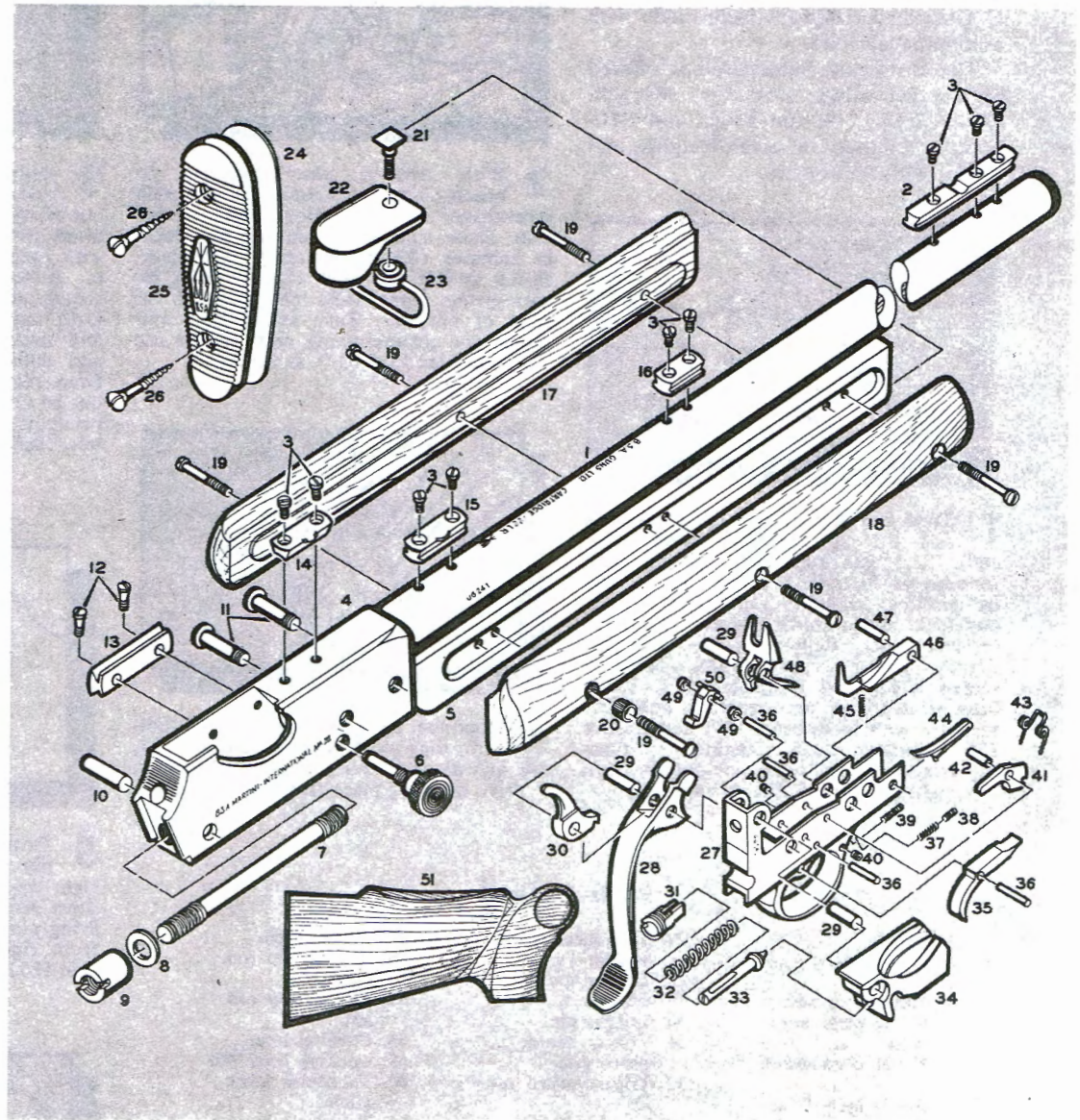
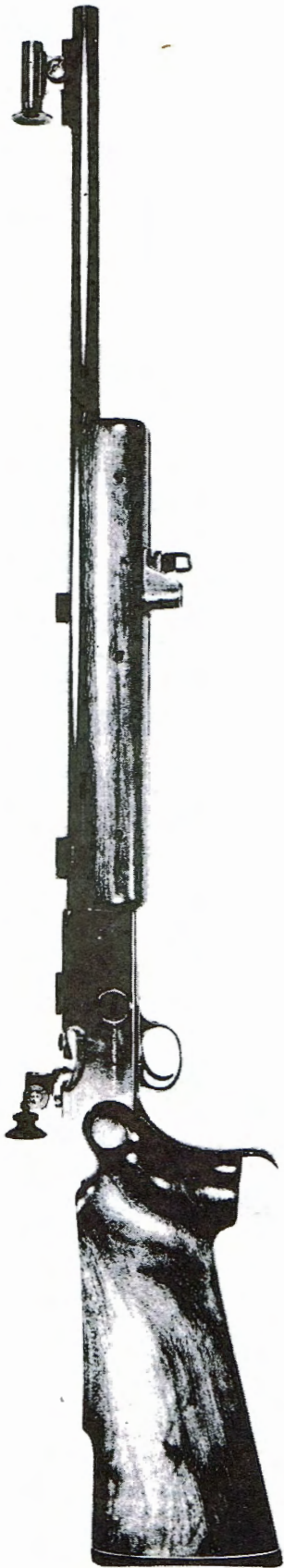
**6** Remove top-lever spring retaining screw (17), top-lever spring retainer (18), and top-lever spring (16, see arrow). Drift out cocking lever pin (59) from left to right. Should this pin have been reversed, it will lodge tighter when tapped; in that case drive it out the other way. Remove cocking lever (58), lift top-lever (15) directly up, and grasp rear of locking bolt (33) and draw it rearward out of receiver. Drift top-lever out by placing drift on either side of top-lever dog (22). Top-lever dog will rotate on top-lever dog screw (23) and clear hole in receiver. Remove top lever. Reassemble gun in reverse order

## Parts Legend

- |                                      |                                  |                                     |
|--------------------------------------|----------------------------------|-------------------------------------|
| 1. Barrels                           | 27. Tang-piece screw, bottom     | 55. Hammer pin                      |
| 2. Bead sight                        | 28. Trigger spring               | 56. Ejector trip rod, right         |
| 3. Forearm                           | 29. Selector spring              | 57. Ejector trip rod, left          |
| 4. Forearm screw                     | 30. Trigger pin                  | 58. Cocking lever                   |
| 5. Barrel plate wood, right          | 31. Trigger guard, pistol grip   | 59. Cocking lever pin               |
| 6. Barrel plate wood, left           | 32. Trigger guard screw (2)      | 60. Takedown lever latch            |
| 7. Barrel plate screw (2)            | 33. Locking bolt                 | 61. Takedown lever latch spring     |
| 8. Ejector extension, right          | 34. Tang piece                   | 62. Cocking lever lifter            |
| 9. Ejector, right                    | 35. Stock bolt washer            | 63. Cocking lever lifter pin        |
| 10. Ejector extension stop screw (2) | 36. Stock bolt lock-washer       | 64. Takedown lever pin              |
| 11. Ejector stop screw (2)           | 37. Stock bolt                   | 65. Ejector hammer, left            |
| 12. Ejector extension, left          | 38. Trigger 3/4 rear             | 66. Ejector hammer, right           |
| 13. Ejector, left                    | 39. Trigger piston spring        | 67. Ejector hammer pin              |
| 14. Receiver                         | 40. Trigger piston               | 68. Ejector hammer sear (2)         |
| 15. Top-lever                        | 41. Trigger piston pin           | 69. Ejector hammer sear pin (2)     |
| 16. Top-lever spring                 | 42. Mainspring (2)               | 70. Ejector hammer sear spring (2)  |
| 17. Top-lever spring retaining screw | 43. Mainspring guide (2)         | 71. Forearm bracket                 |
| 18. Top-lever spring retainer        | 44. Inertia block                | 72. Takedown lever latch pin        |
| 19. Firing pin spring, under         | 45. Inertia block spring guide   | 73. Ejector hammer spring guide (2) |
| 20. Firing pin, under                | 46. Inertia block spring guide   | 74. Ejector hammer spring (2)       |
| 21. Firing pin, over                 | 47. Connector                    | 75. Buttplate                       |
| 22. Top-lever dog                    | 48. Hammer, right                | 76. Buttplate screw (2)             |
| 23. Top-lever dog screw              | 49. Hammer, left                 | 77. Takedown lever                  |
| 24. Selector, safety                 | 50. Sear, right                  |                                     |
| 25. Selector block                   | 51. Sear, left                   |                                     |
| 26. Tang-piece screw, top            | 52. Sear spring (2)              |                                     |
|                                      | 53. Sear pin                     |                                     |
|                                      | 54. Firing pin retaining pin (2) |                                     |



# BSA MARTINI-INT'L MK III RIFLE



## Parts Legend

1. Barrel\*
2. Foresight stool
3. Stool fixing screw (9)
4. Body
5. Fore-end support\*
6. Guard keeper screw
7. Stock bolt
8. Stock bolt washer
9. Stock bolt nut
10. Pivot pin†
11. Barrel fixing screws (2)\*
12. Backsight plate screw (2)
13. Backsight attachment plate
14. Backsight tube stool
15. Rear telescope stool
16. Front telescope stool
17. Left fore-end grip

18. Right fore-end grip
19. Fore-end grip screw (6)
20. Fore-end screw bush (6)
21. Handstop swivel screw
22. Handstop
23. Swivel assembly
24. Buttplate spacer
25. Buttplate
26. Buttplate screw (2)
27. Trigger frame
28. Cocking lever
29. Axis pin, large (3)‡
30. Tumbler
31. Striker retaining screw
32. Striker spring
33. Striker
34. Breechblock
35. Trigger
36. Axis pin, small (4)
37. Trigger spring

38. Trigger adjusting screw
39. Trigger stop screw
40. Locking screw (2)
41. Hammer
42. Hammer bush†
43. Hammer spring
44. Ejector spring
45. Ejector lever spring
46. Ejector release lever
47. Ejector lever axis pin
48. Ejector
49. Sear spacing collar (2)
50. Sear
51. Butt

\*Factory assembled to insure precision accuracy. Do not disassemble.

†Permanent factory assembled.

‡One each functions as axis for breechblock, cocking lever, and ejector.



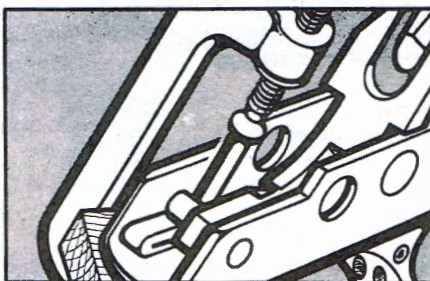
**T**HE BSA Martini-International Mk III match rifle was first made available for general sale in May 1960. Chambered for the cal. .22 long rifle cartridge, the Mk III rifle is the latest of a long series of Martini-action precision target rifles made by the English firm of BSA Guns Ltd. The Mk III rifle replaced the BSA Mk II model introduced after World War II.

The basic action design of this rifle is very old and stems from U. S. Patent No. 35,947 granted in 1862 to H. L. Peabody of Boston, Mass. The Peabody patent featured a falling breechblock hinged at the rear end. The patent covered both hammerless and exposed hammer ignition systems, but the latter style was selected for production here. The Peabody rifle was tested by U. S. Ordnance boards, but failed of adoption. However, a considerable quantity of Peabody military rifles were manufactured by the Providence Tool Co., for various foreign countries, including Canada and Turkey.

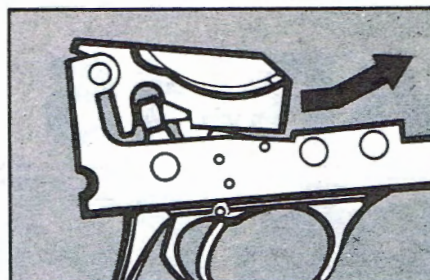
In 1867 the Swiss Republic adopted the Peabody rifle, and during the trials, a Swiss inventor, Friedrich Martini, developed a hammerless modification of the rifle, or improvement of the action, in which the striker was driven by an internal coil spring.

The English government subsequently adopted a service rifle with the Peabody-Martini action, and the barrel was rifled according to the plan of Alexander Henry. The rifle was then arbitrarily called the Martini-Henry, the name of the original inventor being ignored.

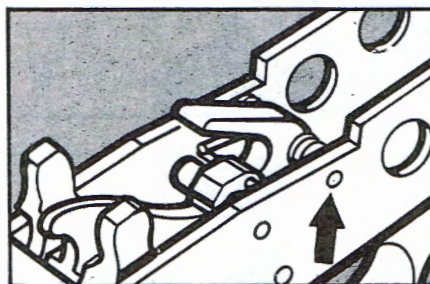
The Peabody-Martini action is particularly suitable for rimfire target rifles as the compact design provides solid support of the cartridge and very fast lock time. In the current Mk III model the entire action mechanism can be easily withdrawn from the receiver for routine inspection or cleaning. The full-floated barrel has a strikingly long 3" bearing in the receiver which enhances rigidity of the barrel-receiver assembly. The under-lever loading principle and feed groove in the breechblock permit convenient loading of the chamber in the prone position without taking the rifle from the shoulder. The trigger is fully adjustable for weight of pull and overtravel. The stock assembly of French walnut, is of Monte Carlo pattern and is based on the design of Al Freeland, a leading American smallbore rifleman. The Mk III is optionally available in both left-hand and right-hand action styles.



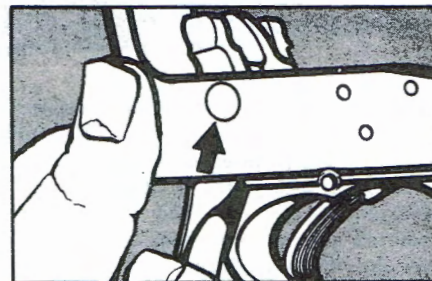
**1** Disassemble BSA Mk III by first pressing cocking lever (28) to full ejection position and unscrewing guard keeper screw (6). Trigger frame (27) carrying complete mechanism may be removed by exerting downward pressure on trigger guard. Place a 1" length of 3/16" drill rod against ejector spring (44) and apply machinists clamp as shown using block of soft wood against bottom surface of trigger frame. This relieves tension on ejector (48) and ejector lever axis pin (47). Drift out this pin and ejector axis pin (29) and remove ejector, ejector spring, ejector release lever (46), and ejector lever spring (45) being careful not to lose the latter



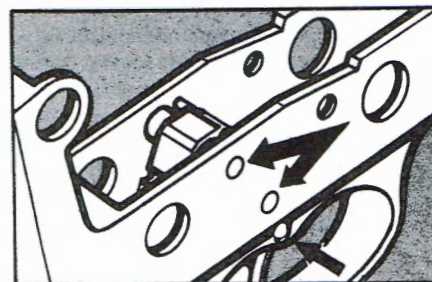
**2** Drift out breechblock axis pin (29) and with breechblock (34) still in ejection position, pull breechblock firmly forward, upward, and away. This requires some tricky manipulation to get the feel in order to release breechblock from tumbler (30) and cocking lever



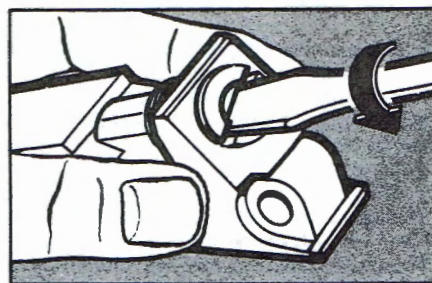
**3** Next—carefully drift out hammer axis pin (36, arrow) and lift out hammer (41) with hammer bush (42) and hammer spring (43) attached



**4** Drift out cocking lever axis pin (29) and lift out tumbler (30) and remove cocking lever through top of trigger frame. Cocking lever must be turned sideways when bringing handle portion through trigger frame



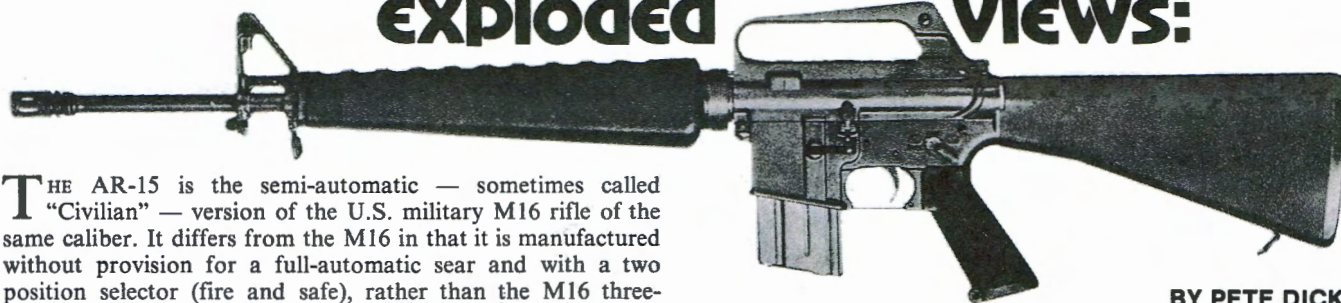
**5** Drift out sear axis pin (36) and axis pin, small (36, upper arrows) and remove sear (50) and sear spacing collars (49). Drift out trigger axis pin (36, lower arrow) and lift trigger (35) out from top of frame being careful not to lose trigger spring (37) which will drop out when frame is turned upside down



**6** Using a wide-blade screwdriver, unscrew striker retaining screw (31) and tap out striker spring (32) and striker (33). Reassemble mechanism in reverse. When hammer has been replaced, hammer spring prongs can be engaged to sear pinions by inserting small screwdriver under each side of hammer axis pin and gently prying spring prongs upward and over sear pinions



# Exploded Views:



BY PETE DICKEY

**T**HE AR-15 is the semi-automatic — sometimes called “Civilian” — version of the U.S. military M16 rifle of the same caliber. It differs from the M16 in that it is manufactured without provision for a full-automatic sear and with a two position selector (fire and safe), rather than the M16 three-position selector (safe, semi and auto). The later M16A1 U.S. Service rifle is equipped with a forward assist plunger on the right side of the receiver, but this is lacking in the M16 and the AR-15.

The AR-15, then, is a semi-automatic, gas-operated, magazine-fed rifle, suitable for military match-type shooting and popular as a small game hunting rifle. It was introduced by Colt in 1963, and at this writing over a 100,000 have been made and sold. In addition to its sporting use, the AR-15 has considerable appeal as a police or guard rifle, where full-automatic capability is not required.

The AR-15 is made up of more than 150 parts, but many of these parts are pre-assembled by the factory into component groups. A simple appearing handguard, for instance, is actually a two-part riveted assembly comprised of 24 separate, if simple, pieces. The buffer assembly (over a dozen parts) may be removed easily from the buttstock as a unit, but should not be broken down to its component parts.

There also are various screws with thread-locking material installed and a number of rollpins and rivets, the removal of any of which would tend to lessen its effectiveness on reinstallation. In some cases it might be necessary to replace pins, rivets or

springs after removal, and for this reason it is recommended that the AR-15 be field-stripped only, with further disassembly left in the hands of a competent gunsmith or armorer with access to replacement parts.

## Sight Adjustment:

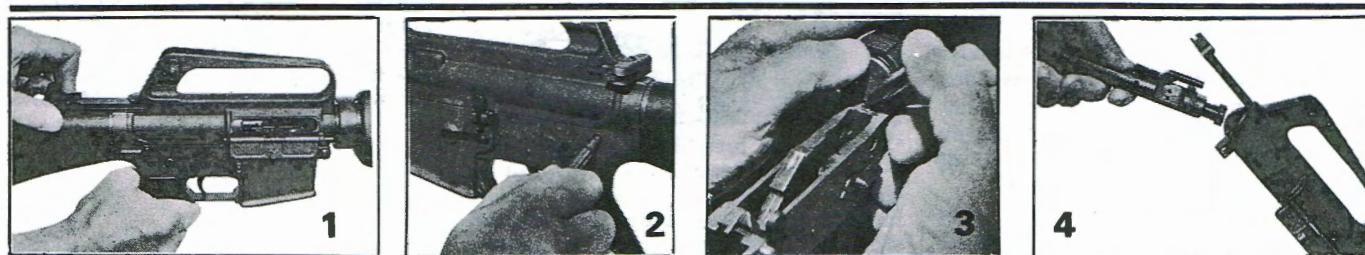
The AR-15 is equipped with an aperture rear sight and post front sight. They are adjustable in 1 MOA graduations for windage and elevation, respectively.

The rear sight has two apertures on a folding, L-shaped arm. The short range aperture is used for 300-yd. ranges. The long range aperture, identified by the letter “L,” is used for 300-500-yd. ranges.

The windage adjustment is located on the right side of the carrying handle at the rear sight. Adjustments to the windage drum (86) are made by inserting the point of a cartridge into its lowest small hole. Depress the detent (85) and rotate the drum clockwise to move point of impact to the right — counterclockwise for movement to the left.

For elevation adjustment, depress the front sight detent (107) at the base of the sight post (106) and turn the post clockwise to move the point of impact up. ■

# COLT AR-15 RIFLE

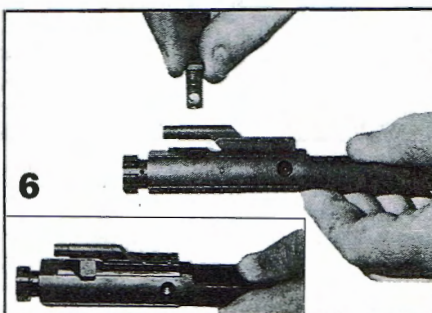


1. Depress the magazine catch button (55) and withdraw the magazine box (1). Depress the handle latch (80) and retract the charging handle (77). Examine chamber to make sure it is clear of a cartridge. Release the charging handle.

2. With the tip of a cartridge push the takedown pin (56) located above the safety lever through the receiver from left to right. The barrel unit may now be “broken open” from the stock in the same way that a double-barrel shotgun is broken open.

3. The buffer body (31) and all its attendant parts are easily withdrawn by pressing down the buffer retainer (26). The buffer assembly is, of course, under some tension, and care should be exercised in its removal. It is not recommended that the trigger or hammer parts be removed, but their placement is evident with the action open.

4. Withdraw the bolt carrier (67) from the upper receiver (91). This will require the retraction of the charging handle which,



after the bolt carrier's removal, can be taken out completely, if required.

5. The bolt itself (69) containing extractor, ejector, firing pin and associated parts, is removed from the carrier by first pushing out the firing pin retainer (63) and pulling the exposed firing pin (62) to the rear and out.

6. Push the bolt to the rear and turn the bolt cam pin (64) until it is free of the bolt carrier key (66) and can be lifted out; with this accomplished, the bolt may be withdrawn and the extractor and ejector retaining pins exposed. Their removal is not recommended, nor is the removal of the three bolt rings (68). These bolt rings should have their openings staggered for best operation of the rifle.

Handguard removal is accomplished simply by pulling back on the handguard slip ring (120) and separating the two handguard halves (97 & 105). Field stripping is now complete, and reassembly is accomplished by reversing the procedure.

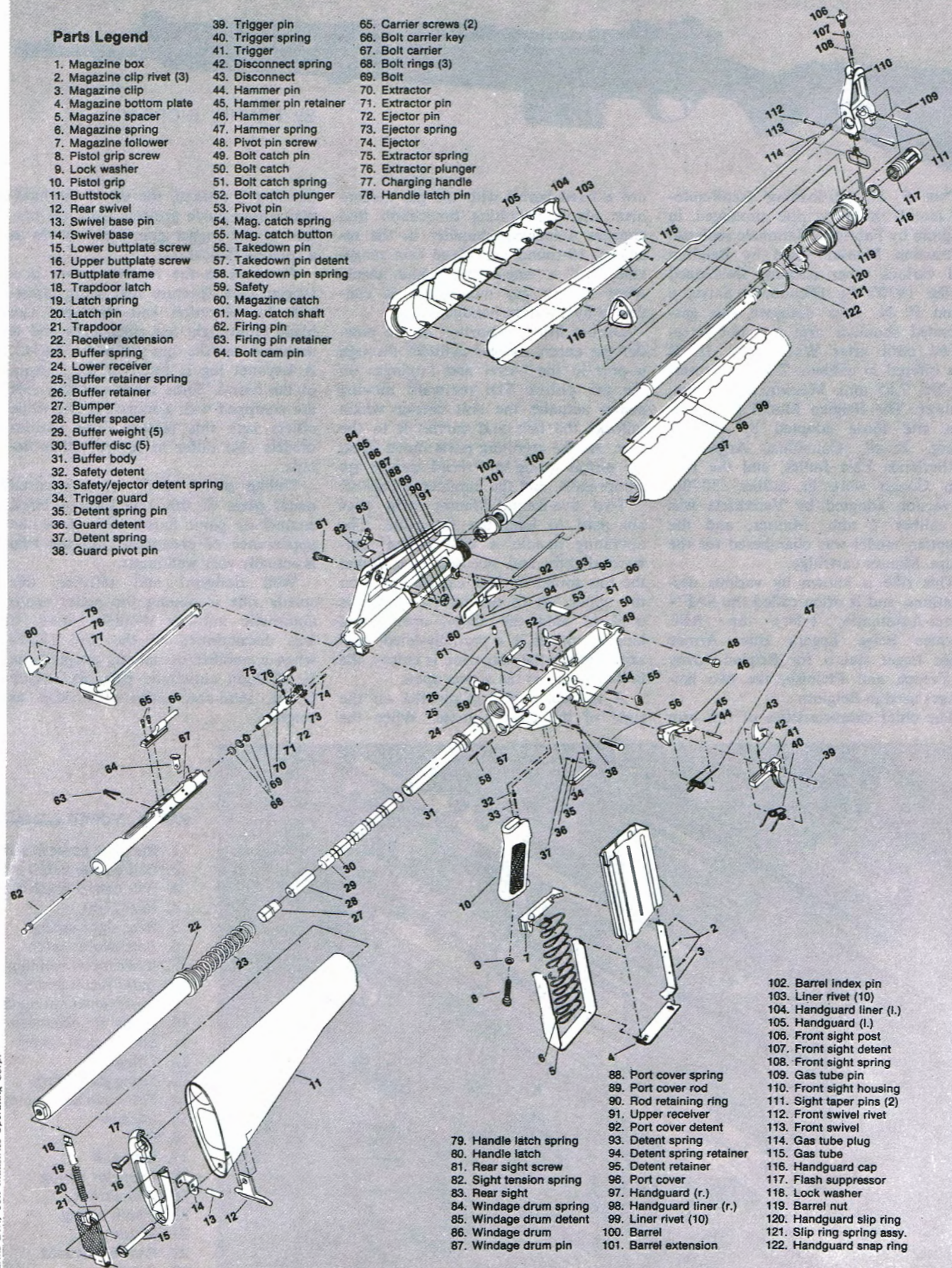


## Parts Legend

1. Magazine box
2. Magazine clip rivet (3)
3. Magazine clip
4. Magazine bottom plate
5. Magazine spacer
6. Magazine spring
7. Magazine follower
8. Pistol grip screw
9. Lock washer
10. Pistol grip
11. Buttstock
12. Rear swivel
13. Swivel base pin
14. Swivel base
15. Lower buttplate screw
16. Upper buttplate screw
17. Buttplate frame
18. Trapdoor latch
19. Latch spring
20. Latch pin
21. Trapdoor
22. Receiver extension
23. Buffer spring
24. Lower receiver
25. Buffer retainer spring
26. Buffer retainer
27. Bumper
28. Buffer spacer
29. Buffer weight (5)
30. Buffer disc (5)
31. Buffer body
32. Safety detent
33. Safety/ejector detent spring
34. Trigger guard
35. Detent spring pin
36. Guard detent
37. Detent spring
38. Guard pivot pin

39. Trigger pin
40. Trigger spring
41. Trigger
42. Disconnect spring
43. Disconnect
44. Hammer pin
45. Hammer pin retainer
46. Hammer
47. Hammer spring
48. Pivot pin screw
49. Bolt catch pin
50. Bolt catch
51. Bolt catch spring
52. Bolt catch plunger
53. Pivot pin
54. Mag. catch spring
55. Mag. catch button
56. Takedown pin
57. Takedown pin detent
58. Takedown pin spring
59. Safety
60. Magazine catch
61. Mag. catch shaft
62. Firing pin
63. Firing pin retainer
64. Bolt cam pin

65. Carrier screws (2)
66. Bolt carrier key
67. Bolt carrier
68. Bolt rings (3)
69. Bolt
70. Extractor
71. Extractor pin
72. Ejector pin
73. Ejector spring
74. Ejector
75. Extractor spring
76. Extractor plunger
77. Charging handle
78. Handle latch pin

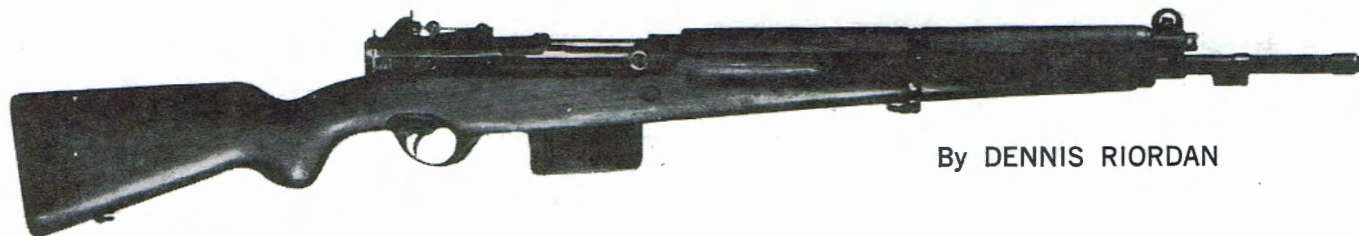


102. Barrel index pin
103. Liner rivet (10)
104. Handguard liner (l.)
105. Handguard (l.)
106. Front sight post
107. Front sight detent
108. Front sight spring
109. Gas tube pin
110. Front sight housing
111. Sight taper pins (2)
112. Front swivel rivet
113. Front swivel
114. Gas tube plug
115. Gas tube
116. Handguard cap
117. Flash suppressor
118. Lock washer
119. Barrel nut
120. Handguard slip ring
121. Slip ring spring assy.
122. Handguard snap ring

79. Handle latch spring
80. Handle latch
81. Rear sight screw
82. Sight tension spring
83. Rear sight
84. Windage drum spring
85. Windage drum detent
86. Windage drum
87. Windage drum pin
88. Port cover spring
89. Port cover rod
90. Rod retaining ring
91. Upper receiver
92. Port cover detent
93. Detent spring
94. Detent spring retainer
95. Detent retainer
96. Port cover
97. Handguard (r.)
98. Handguard liner (r.)
99. Liner rivet (10)
100. Barrel
101. Barrel extension



# FN SEMI-AUTOMATIC RIFLE



By DENNIS RIORDAN

**T**HE F. N. self-loading (semi-automatic) military rifle produced in Belgium by Fabrique Nationale replaced bolt-action Mausers used by Belgium and various other nations. Developed in the 1930's by Dieudonne Saive, a noted F. N. arms designer, this gas-operated shoulder arm was not introduced until after World War II. It was offered in calibers 7 mm. Mauser, .30-'06, 7.65 mm. Mauser, and 8 mm. Mauser. The Belgian Model 1949 version and those adopted by Luxembourg, Brazil, Colombia, Argentina, Netherlands East Indies, and the Belgian Congo were in caliber .30-'06. A version adopted by Venezuela was in caliber 7 mm. Mauser, and the Egyptian model was chambered for the 8 mm. Mauser cartridge.

This rifle is known by various designations, and is often called the SAFN (Semi-Automatic F.N.) or ABL (Armee Belge Leger) rifle. Armee Belge Leger stands for Belgian Army in French and Flemish, the two languages used in Belgium.

The chief characteristics of this arm

are a fixed barrel with the gas mechanism above it, tilting breechbolt that engages a locking shoulder in the receiver, 10-round semi-fixed box magazine, and a one-piece walnut stock. Most of the gas mechanism is concealed by a walnut handguard.

During firing, a portion of the powder gas enters the gas cylinder through a port in the barrel and impinges on the gas piston. The rearward moving piston actuates the bolt carrier which unlocks the bolt and carries it to the rear. As the recoiling parts move back, the piston spring and recoil springs are compressed, and the hammer is cocked.

Two five-round Mauser strip clips are used to load the magazine. The operating handle is then pulled rearward slightly and released to chamber the top round. A bolt carrier catch on the upper left of the receiver cover is used to hold the action open when loading rounds in a partially-filled magazine. When the magazine is empty, the bolt catch holds the action open.

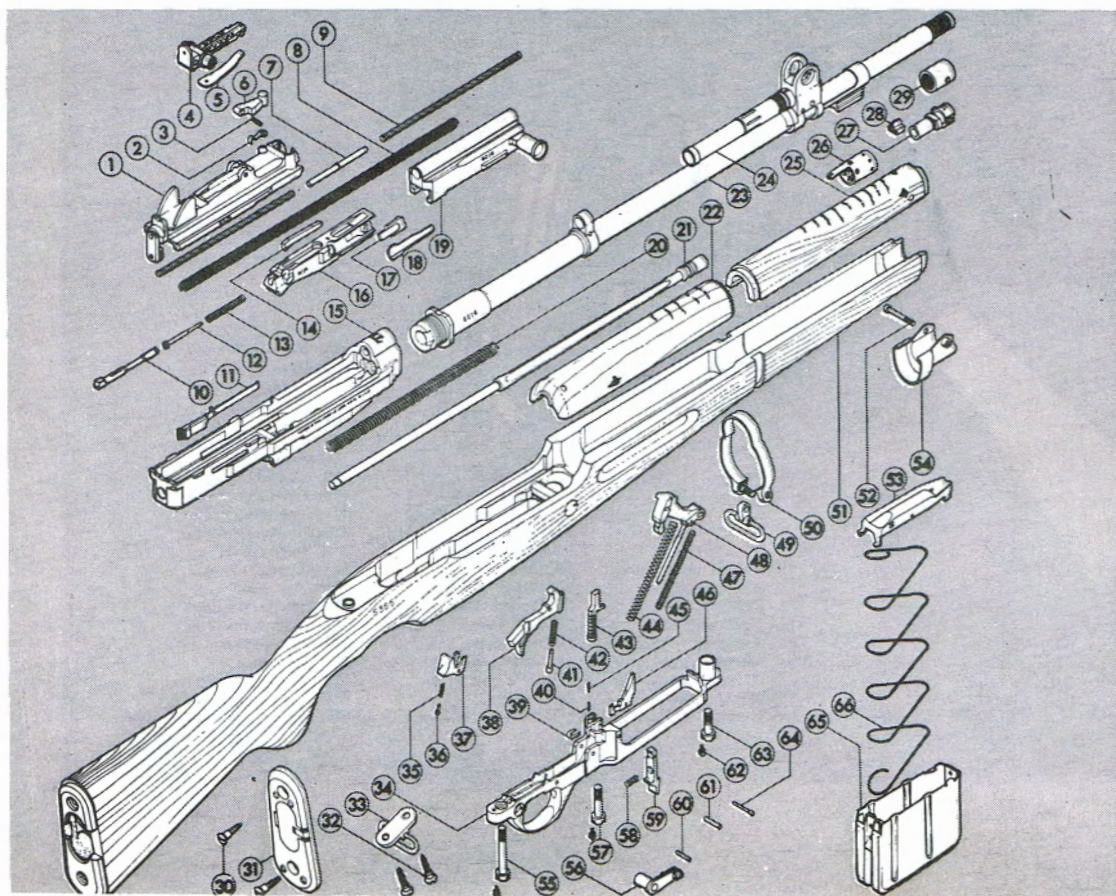
A manual safety is pivoted on the right of the trigger guard. When the

hammer is cocked, the tip of the hammer spring guide projects from the bottom of the trigger guard and serves as a cocking indicator.

Fastened to the receiver cover is a tangent-type aperture rear sight adjustable for elevation and windage. The blade front sight has sideguards and is mounted on the gas cylinder bracket. A bayonet lug is fitted to the bottom of the barrel. Some models of this rifle are equipped with a muzzle brake while others lack this feature. The various models also differ in several other details.

Unlike many small arms, exposed metal parts of this rifle have a black enamel or paint finish. This gives the appearance of cheapness, but the rifle is actually very well made.

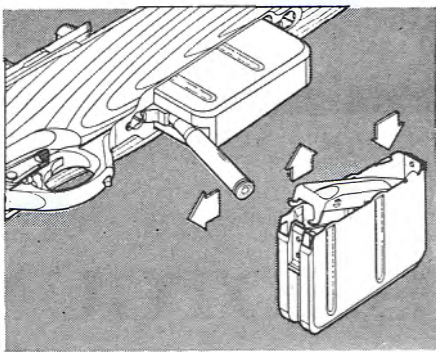
Well designed and reliable, this sturdy rifle is among the better semi-automatic military shoulder arms. It was discontinued in the late 1950's when a number of nations adopted the F. N. light automatic rifle, and many F. N. semi-automatics were sold as surplus.



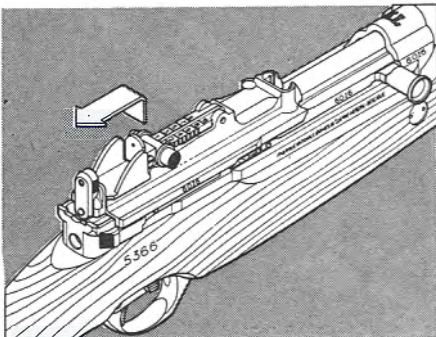
## PARTS LEGEND

1. Receiver cover assembly
2. Bolt carrier catch stop
3. Bolt carrier catch spring
4. Rear sight
5. Rear sight spring
6. Bolt carrier catch
7. Inner recoil spring guide
8. Outer recoil spring
9. Inner recoil spring (2)
10. Firing pin extension
11. Sliding dust cover
12. Firing pin
13. Firing pin spring
14. Firing pin safety stop
15. Receiver
16. Bolt
17. Extractor
18. Extractor spring
19. Bolt carrier
20. Piston spring
21. Piston
22. Rear handguard
23. Barrel
24. Gas cylinder

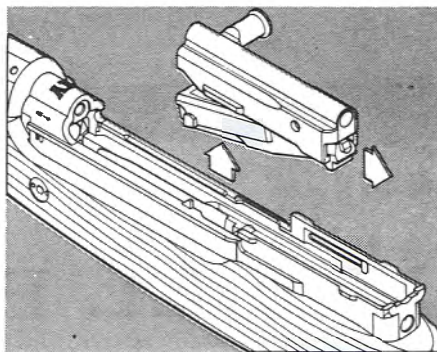




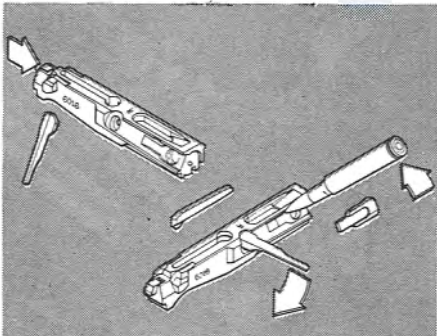
**1** Make certain that the rifle is unloaded. Insert a cartridge nose in channel at rear of magazine box (65), pry back magazine catch (59) and remove magazine. Press front end of follower (53) downward until its rear hook disengages from the magazine box. Then, ease out follower and follower spring (66).



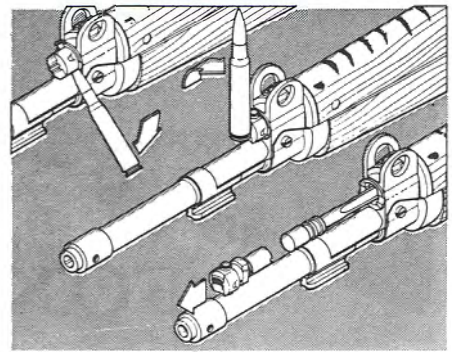
**2** Pull operating handle of bolt carrier (19) fully to the rear and release to cock rifle. Turn locking key at rear of receiver cover assembly (1) upward, and push cover forward until it strikes its stop. Lift rear end of cover to disengage it from receiver (15), and ease off to the rear. Recoil springs (8, 9) come off with the cover.



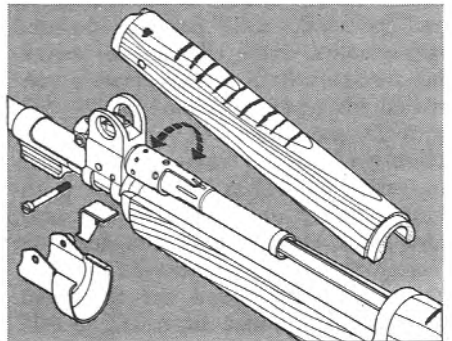
**3** Pull operating handle back until bolt carrier guides align with dismount cuts in receiver. Lift off carrier and bolt (16), and separate by pulling bolt rearward out of carrier.



**4** Lift firing pin safety stop (14) out of bolt. Using a cartridge point, flex extractor spring (18) out of extractor (17), and rotate the spring 1/4 turn downward. Remove extractor. Press firing pin extension (10) fully forward into bolt and pull out extractor spring. Remove firing pin extension, firing pin (12), and firing pin spring (13).

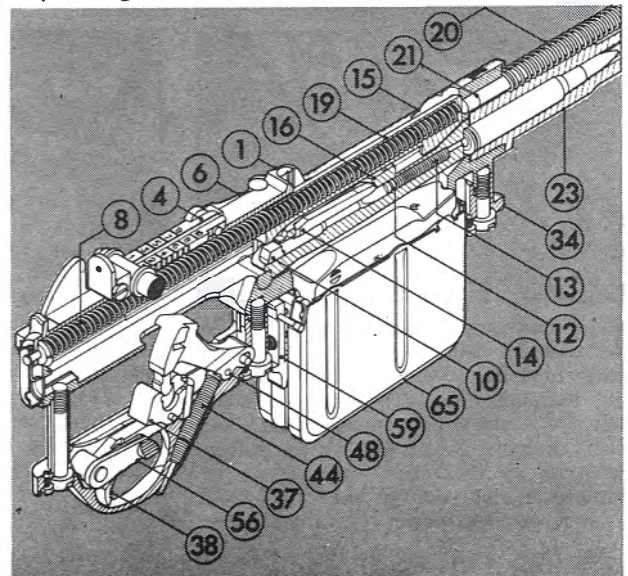


**5** Press in the detent of gas cylinder plug (27) with a cartridge point, and rotate the plug 1/4 turn clockwise, using first the nose, then the rim of the cartridge. Remove the plug and depress muzzle to allow piston (21) and piston spring (20) to slide out. Reassemble rifle in reverse. On replacing gas cylinder plug, letter "A" (Arabic inscription on Egyptian model) must face up. When opposite side of plug faces up, the gas port is blocked so that rifle can be used for launching grenades.



**6** To adjust gas cylinder, remove stock end cap screw (52), slide stock end cap (54) forward and remove it. Lift forward end of front hand guard (25) and slide forward out of lower band (50). Turn gas adjusting sleeve (26) right to increase gas pressure; left to decrease. Cases must eject smartly, but not violently.

**7** Cutaway shows relationship between assembled parts. Rifle is loaded and cocked, bolt cammed down against receiver locking shoulder. Parts are number keyed to parts legend.



- |                                       |                                    |
|---------------------------------------|------------------------------------|
| 25. Front handguard                   | 46. Ejector                        |
| 26. Gas adjusting sleeve              | 47. Inner hammer spring            |
| 27. Gas cylinder plug                 | 48. Hammer and hammer spring guide |
| 28. Front sight                       | 49. Lower band swivel              |
| 29. Muzzle cap                        | 50. Lower band                     |
| 30. Buttplate screw (2)               | 51. Stock                          |
| 31. Buttplate                         | 52. Stock end cap screw            |
| 32. Butt swivel screw (2)             | 53. Magazine follower              |
| 33. Butt swivel                       | 54. Stock end cap                  |
| 34. Trigger guard                     | 55. Rear guard screw               |
| 35. Auxiliary sear spring             | 56. Safety                         |
| 36. Auxiliary sear spring plunger     | 57. Center guard screw             |
| 37. Auxiliary sear                    | 58. Magazine catch spring          |
| 38. Trigger                           | 59. Magazine catch                 |
| 39. Bolt stop retainer                | 60. Trigger pin                    |
| 40. Bolt stop retainer plunger spring | 61. Hammer pin                     |
| 41. Trigger spring plunger            | 62. Guard screw stop screw (3)     |
| 42. Trigger spring                    | 63. Front guard screw              |
| 43. Bolt stop assembly                | 64. Magazine catch pin             |
| 44. Outer hammer spring               | 65. Magazine box                   |
| 45. Bolt stop retainer plunger        | 66. Magazine follower spring       |





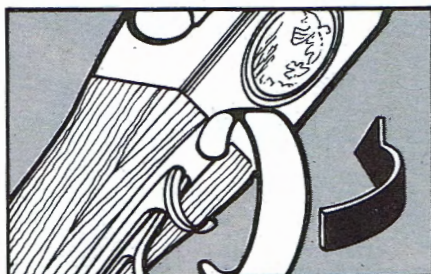
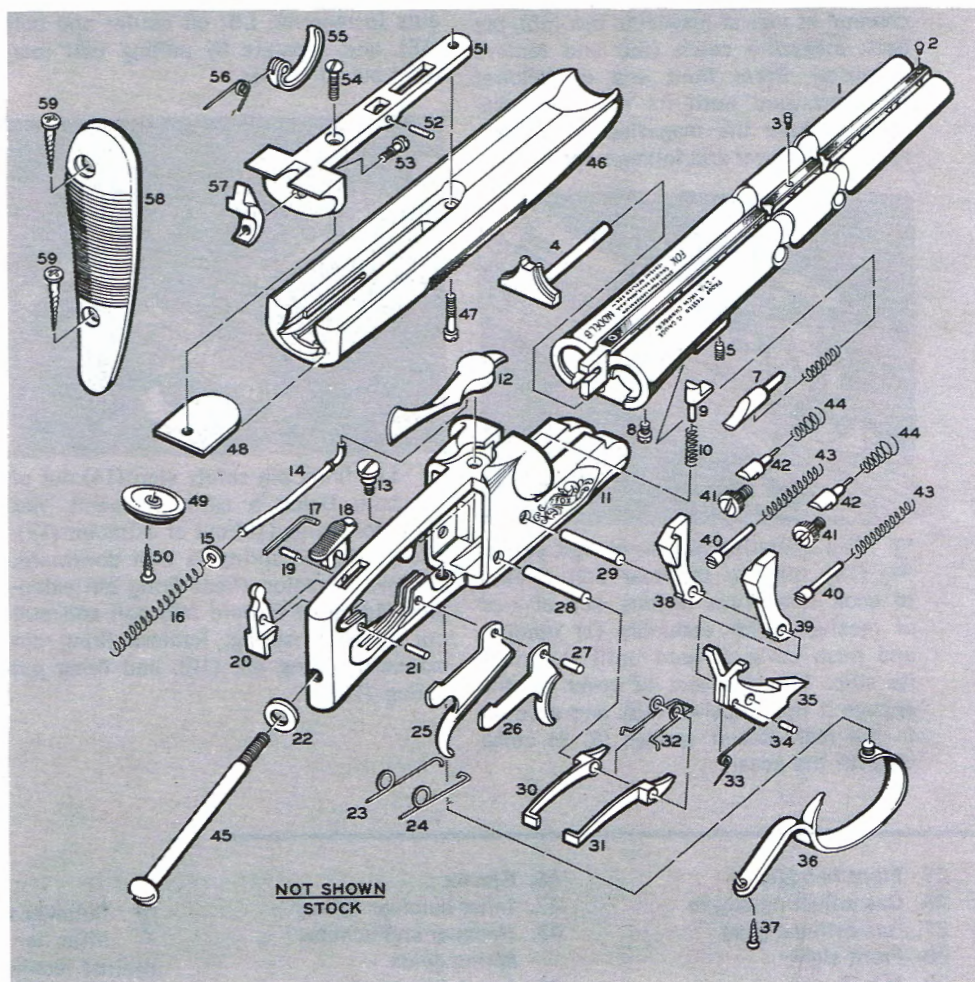
# FOX MODEL B SHOTGUN

By THOMAS E. WESSEL

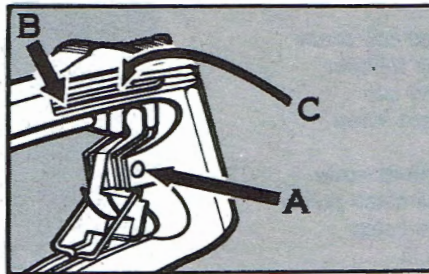
**T**HE Fox Model B is a moderately-priced side-by-side double-barrel shotgun with concealed hammers. Introduced in 1939 by Savage Arms Corp., this gun bears the name of the famous Fox shotguns which were produced for many years by the A. H. Fox Gun Co. in Philadelphia. In 1930, Savage bought out the Fox Co., and the Model B is the only shotgun that is still in production under the name "Fox".

There are a number of versions of the Model B. The Model B has 2 triggers, and the Model B-ST has a gold-plated non-selective single trigger and beaver-tail fore-end. Both versions have a ventilated rib, and are offered in 12-, 16-, and 20-ga., and .410-bore. They feature a box-type frame which is case-hardened in colors, automatic push-button safety on upper receiver tang, and black walnut stock and fore-end. The stock is of pistol-grip type with cap, and grip and fore-end are checkered. Barrel lengths range from 26" to 30", and chokes from improved cylinder to full. The Model B De Luxe is similar to the B-ST, but with a chrome-finish frame and trigger guard, and checkering on the stock panels.

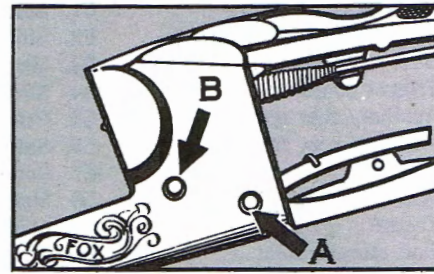
In earlier versions of this gun, the fore-end iron is held to the fore-end by 2 wood screws. In some later specimens 2 machine screws are used in lieu of wood screws, and in the newest Model B the rear fore-end screw engages a threaded hole in a flat steel fore-end insert. The latest type is illustrated.



**1** Remove trigger guard screw (37) and unscrew trigger guard (36) from frame (11). Remove buttplate screws (59) and buttplate (58). Then remove stock bolt (45), stock bolt washer (22), and stock. Remove fore-end (46) by pulling down on its front end, open action by pushing to right on top snap (12), and remove barrel assembly (1) from frame



**2** Remove triggers (25 & 26) after drifting out trigger pin (27) from right to left. (A) Drive out safety lever pin (21), and remove trigger springs (23 & 24) and safety lever (20). (B) Pry out safety spring (17), (C) remove safety plunger (19), and safety button (18)

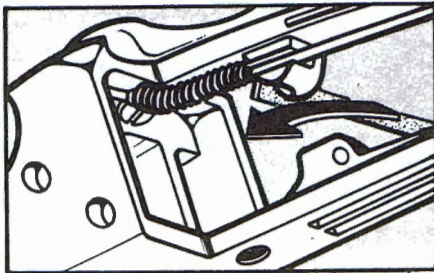


**3** (A) Drive out sear pin (28), and remove sears (30 & 31). Remove sear spring (32) from under cocking lever spring (33). (B) Drift out cocking lever and hammer pin (29) and take out hammers (38 & 39), mainsprings (43), main-spring plungers (40), and cocking lever (35). Turn out firing pin retaining screws (41) and withdraw firing pins (42) and firing pin springs (44)

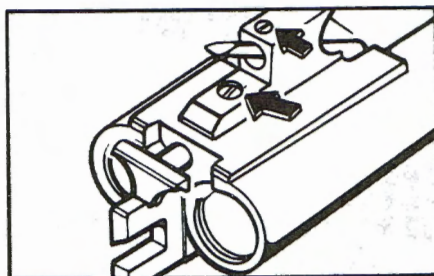


## Parts Legend

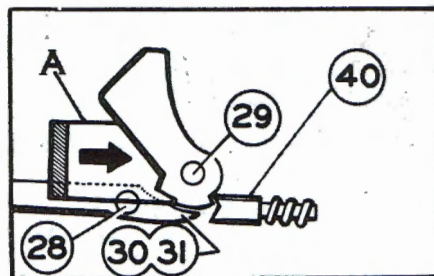
- |                                    |                                  |                                    |
|------------------------------------|----------------------------------|------------------------------------|
| 1. Barrel assembly                 | 20. Safety lever                 | 40. Mainspring plunger (2)         |
| 2. Front sight                     | 21. Safety lever pin             | 41. Firing pin retaining screw (2) |
| 3. Rear sight                      | 22. Stock bolt washer            | 42. Firing pin (2)                 |
| 4. Extractor                       | 23. Trigger spring, left         | 43. Mainspring (2)                 |
| 5. Cocking plunger retaining screw | 24. Trigger spring, right        | 44. Firing pin spring (2)          |
| 6. Cocking plunger spring          | 25. Trigger, left                | 45. Stock bolt                     |
| 7. Cocking plunger                 | 26. Trigger, right               | 46. Fore-end                       |
| 8. Extractor screw                 | 27. Trigger pin                  | 47. Fore-end screw, front          |
| 9. Top snap trip                   | 28. Sear pin                     | 48. Fore-end insert                |
| 10. Top snap trip spring           | 29. Cocking lever and hammer pin | 49. Pistol grip cap                |
| 11. Frame                          | 30. Sear, left                   | 50. Pistol grip cap screw          |
| 12. Top snap                       | 31. Sear, right                  | 51. Fore-end iron                  |
| 13. Top snap screw                 | 32. Sear spring                  | 52. Fore-end spring pin            |
| 14. Top snap plunger               | 33. Cocking lever spring         | 53. Ejector screw                  |
| 15. Top snap plunger collar        | 34. Cocking lever spring pin     | 54. Fore-end screw, rear           |
| 16. Top snap plunger spring        | 35. Cocking lever                | 55. Fore-end spring                |
| 17. Safety spring                  | 36. Trigger guard                | 56. Fore-end spring spring         |
| 18. Safety button                  | 37. Trigger guard screw          | 57. Ejector                        |
| 19. Safety plunger                 | 38. Hammer, left                 | 58. Buttplate                      |
|                                    | 39. Hammer, right                | 59. Buttplate screw (2)            |



**4** Depress top snap trip (9) so that top snap (12) can move to its central position. Using a screwdriver, force top snap plunger spring (16) forward and to left out of lug in top tang of frame. Remove top snap plunger (14), top snap plunger collar (15), and top snap plunger spring. Using an offset screwdriver, remove top snap screw (13) and lift out top snap (12), top snap trip (9), and top snap trip spring (10). Reassemble in reverse. When replacing top snap plunger spring, it is necessary to use a divided-blade push tool similar to a bent screwdriver with split blade to facilitate compression of spring



**5** Remove cocking plunger retaining screw (5—upper arrow), cocking plunger (7), and cocking plunger spring (6). Remove extractor screw (8—lower arrow), and withdraw extractor (4)



**6** When replacing hammers, a special tool (A) is required. It is a piece of steel or brass  $\frac{3}{8}$ "x $\frac{7}{8}$ "x6" long, and bent 90° at approximately 4½" of its length. Its short end is shaped to same outline as back of hammer, and lower point is shaped to enter sear notch of hammer. Clamp frame in vise with padded jaws so that rear of frame is up, and place mainsprings and mainspring plungers into frame. Position a hammer so that its projection at lower front engages notch in mainspring plunger, and push hammer toward front of frame with tool to align hole in hammer with hole in frame. Insert punch through frame hole and hammer, pass punch through cocking lever, put in second hammer, press it forward with tool, and insert punch through holes in second hammer and other side of frame. Then drive in hammer pin, pushing out punch. Drawing shows relative position of parts ■

## A MAN TO REMEMBER

**DANIEL B. WESSON**

*Associated with  
the cartridge  
revolver*



Born—Worcester, Mass.,  
May 18, 1825

Died—Springfield, Mass.,  
Aug. 4, 1906

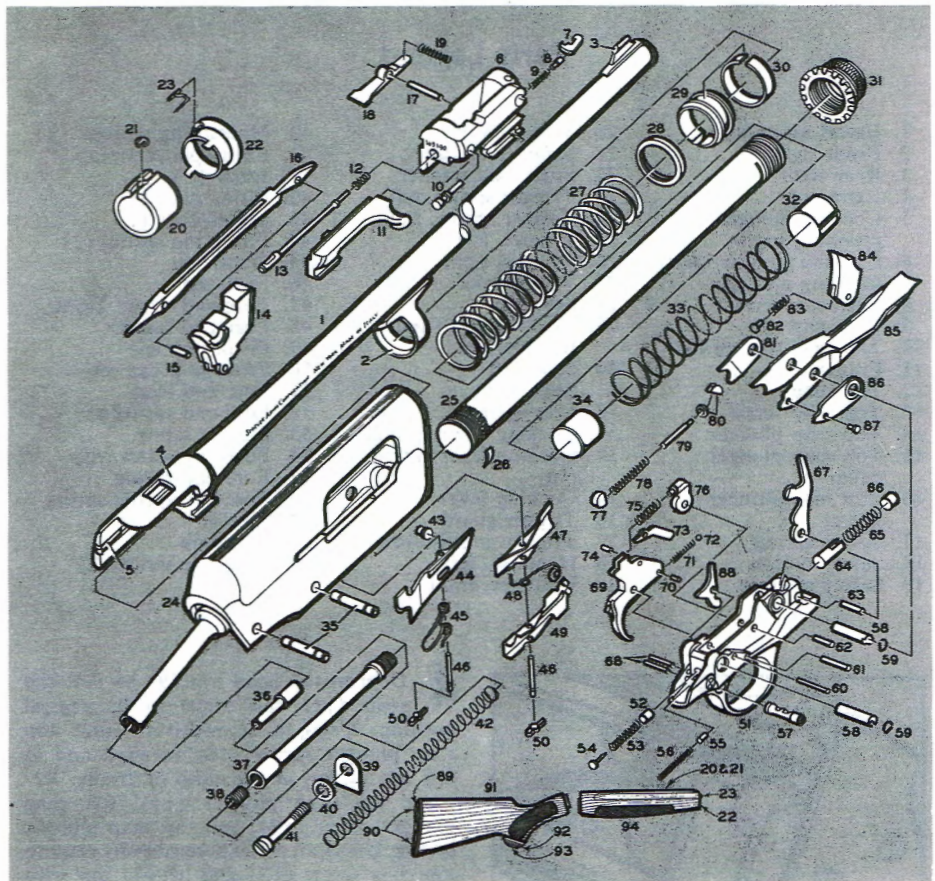
**D**ANIEL WESSON, the fourth of 10 children, followed the lead of an older brother and early decided to be a gunsmith. Upon completion of his schooling at the age of 18, he became an apprentice to his brother and served as such until 1846. Thereafter he worked as a journeyman gunsmith for his brother and a manufacturer in Hartford until his brother died in 1850. Wesson took over the business in partnership with another gunsmith, but when the latter retired he gave up the business and entered the employ of Allen, Brown & Luther of Worcester, a firm specializing in gun barrels.

It was while working for Allen, Brown & Luther that Wesson met Horace Smith, and the association of Smith & Wesson began. In his spare time Wesson devoted himself to the improvement of the metallic cartridge and with the help of Smith to the development of a repeating pistol and rifle. The two formed a partnership in 1853 and manufactured the cartridge and guns until 1855, when they sold out to the Volcanic Arms Co. After the sale of the business, Smith retired, but Wesson remained as superintendent of the company and continued to work on the metallic cartridge and on the improvement of a bored-through cylinder revolver patent he had purchased from Rollin White.

In 1857 Wesson persuaded Smith to form a new partnership with him for the manufacture of the new cartridge and revolver. Both were a huge success, and the partners brought out frequent models and variations in an attempt to improve their products still further.

Smith retired again in 1873, but Wesson remained, carrying on the business alone until 1883 when he took his sons into a partnership with him.—HAROLD L. PETERSON.





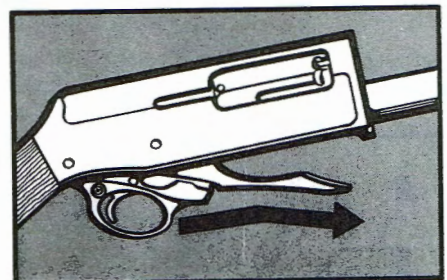
# FRANCHI Automatic Shotgun

By THOMAS E. WESSEL

**T**HE Franchi semi-automatic shotgun is made in Brescia, Italy, by the firm of Luigi Franchi. The action design is based upon the time-tested Browning long-recoil system. Both steel and lightweight-alloy receiver models are offered in 12- and 20-ga. Standard and magnum chamberings are optional in either gauge. Barrels have chrome-plated bores and are available in 24", 26", 27", 28", 30", and 32" lengths, in ribless, matted rib, and ventilated rib styles.

When this gun is new, or when light loads are shot, the inside bevel of the friction ring should be toward the recoil spring. When heavy loads are shot the friction ring should be reversed so that its inside bevel is toward the friction piece. When magnum gauge models are used with magnum loads, the inside bevel of the friction ring should be toward the friction piece.

The manufacturer suggests that the recoil spring of this gun be replaced after firing from 3000 to 4000 rounds.



**1** Disassemble arm by first cocking breechbolt (6) and unscrewing fore-end cap (31). Remove fore-end (94), barrel (1), friction piece (29), friction ring (28), and recoil spring (27). Bring breechbolt forward. Press out trigger guard pins (35) from left side of receiver (24) using a wood dowel. Remove trigger guard (51) by pulling it forward and then down.

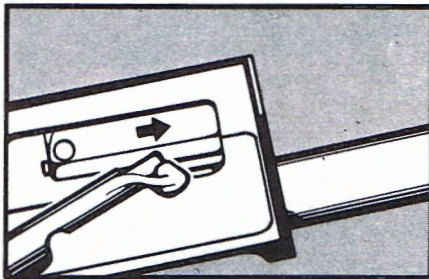


## Parts Legend

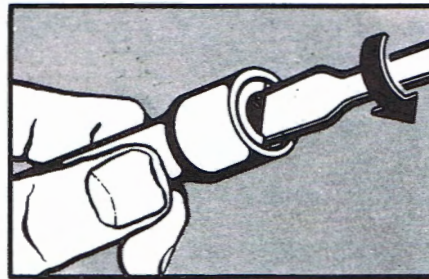
1. Barrel
2. Barrel ring\*
3. Front sight and base\*
4. Barrel extension\*
5. Ejector\*
6. Breechbolt
7. Extractor
8. Extractor plunger
9. Extractor spring
10. Firing pin limit stop
11. Operating handle
12. Firing pin spring
13. Firing pin
14. Locking block
15. Link pin
16. Link
17. Locking block lever pin
18. Locking block lever
19. Locking block lever spring
20. Rear nylon ring
21. Rear nylon ring spring
22. Front nylon ring
23. Fore-end cap retaining spring
24. Receiver
25. Magazine tube
26. Magazine tube blocking spring
27. Recoil spring
28. Friction ring
29. Friction piece
30. Friction spring
31. Fore-end cap
32. Magazine spring retaining ring
33. Magazine spring
34. Magazine follower
35. Trigger guard pin (2)
36. Action spring follower
37. Action spring tube
38. Action spring tube fastener
39. Eccentric washer
40. Elastic washer
41. Stock retaining screw
42. Action spring
43. Carrier latch button
44. Carrier latch
45. Carrier latch spring
46. Pin (2) (for parts 44, 47, & 49)
47. Auxiliary shell latch
48. Magazine shell latch & auxiliary shell latch spring

49. Magazine shell latch
50. Detent (2) (for parts 44, 47 & 49)
51. Trigger guard
52. Auto safety spring plunger
53. Auto safety spring
54. Auto safety spring guide
55. Hand safety spring follower
56. Hand safety spring
57. Hand safety
58. Trigger guard pin, large (2)
59. Trigger guard pin detent (2)
60. Trigger pin
61. Auto safety pin
62. Sear pin
63. Hammer pin
64. Hammer spring tube
65. Hammer spring
66. Hammer spring follower
67. Hammer
68. Hand safety retaining pin (2)
69. Trigger
70. Trigger lever retaining pin
71. Trigger lever spring
72. Trigger lever spring ball
73. Trigger lever
74. Trigger lever pin
75. Sear spring
76. Sear
77. Carrier spring stem pivot point
78. Carrier spring
79. Carrier spring stem
80. Carrier spring retaining washer & detent
81. Left carrier plate
82. Carrier dog spring follower
83. Carrier dog spring
84. Carrier dog
85. Carrier
86. Right carrier plate
87. Carrier dog spring guide pin
88. Auto safety
89. Buttplate
90. Buttplate screw (2)
91. Pistol grip stock
92. Pistol grip cap
93. Pistol grip cap screw
94. Fore-end

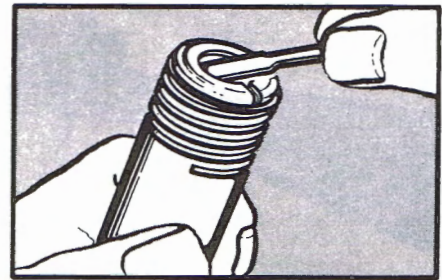
\* Permanent factory assembly to other major part. Do not disassemble.



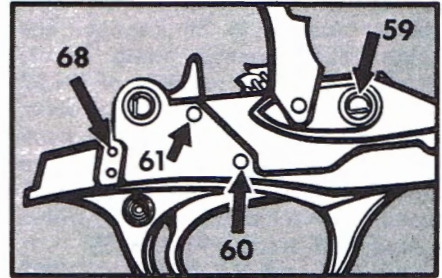
**2** Hold the shotgun in an upright position and depress the action spring follower (36) in order to release the link (16) which will swing out by slightly inclining the shotgun. Push the breechbolt forward out of the receiver. The operating handle (11) will drop away as the breechbolt passes through forward section of the receiver.



**3** Remove buttplate screws (90) and buttplate (89). Unscrew stock retaining screw (41) using long-shanked screwdriver (41) and remove elastic washer (40), eccentric washer (39), and stock (91). Grasp action spring tube (37) firmly and unscrew action spring tube fastener (38) maintaining steady inward pressure to prevent action spring (42) from flying out. Remove spring and spring follower.



**4** Carefully pry out magazine spring retaining ring (32) and remove magazine spring (33) and follower (34).

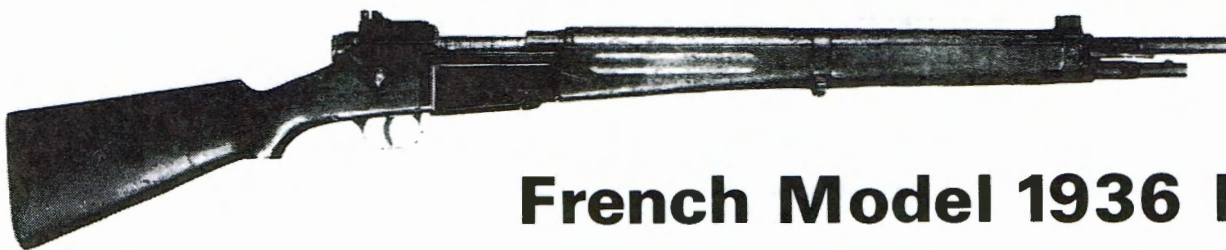


**5** Disassemble firing mechanism by first drifting out upper hand safety retaining pin (68). Remove auto safety spring guide (54), spring (53), and plunger (52). Then drift out auto safety pin (61) and lift out auto safety (88). Drift out trigger pin (60) from left to right and remove sear spring (75). Remove forward trigger guard pin detent (59) and slide large trigger guard pin (58) out forward. Lift away carrier (85) and attached parts. Drift out sear pin (62) and remove sear (76). Lift out trigger (69). Drift out hammer pin (63) and remove hammer (67). Further disassembly of firing mechanism is obvious. Reassemble in reverse.



**6** Disassemble breechbolt by pushing out firing pin limit stop (10). Withdraw firing pin (13) and firing pin spring (12). Push out locking block lever pin (17) and remove locking block lever (18) and spring (19). Rotate locking block (14) and remove it together with link from breechbolt. Insert small screwdriver between extractor (7) and plunger (8), depressing plunger and unhooking extractor. Release pressure on screwdriver slowly and remove plunger and extractor spring (9). Reassemble arm in reverse. ■





# French Model 1936 Rifle

By E. J. HOFFSCHMIDT

**A**DOPED by France in 1936, the Model 1936 cal. 7.5 mm. bolt-action rifle was introduced to replace the series of cal. 8 mm. Lebel and Berthier bolt-action rifles.

The Model 1936 rifle was developed and manufactured by Manufacture D'Armes St. Etienne, a French Government Arsenal in St. Etienne. The initials of the manufacturing arsenal are stamped on the receivers of Model 1936 rifles adjacent to the model designation. Thus, the unofficial but commonly accepted designation for this arm is MAS Model 1936. A folding stock version made for use by airborne troops is designated Model 1936 CR.39.

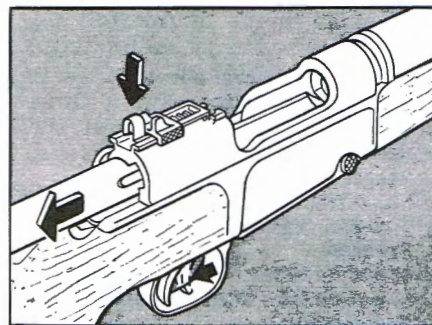
The rimless cal. 7.5 mm. Model 1929 C ball cartridge is assembled with a 139-gr. pointed bullet and its muzzle velocity in a 19.6" barrel is 2690 f.p.s.

The Model 1936 rifle can be loaded through the top of the receiver with 5-round stripper clips. The striker mech-

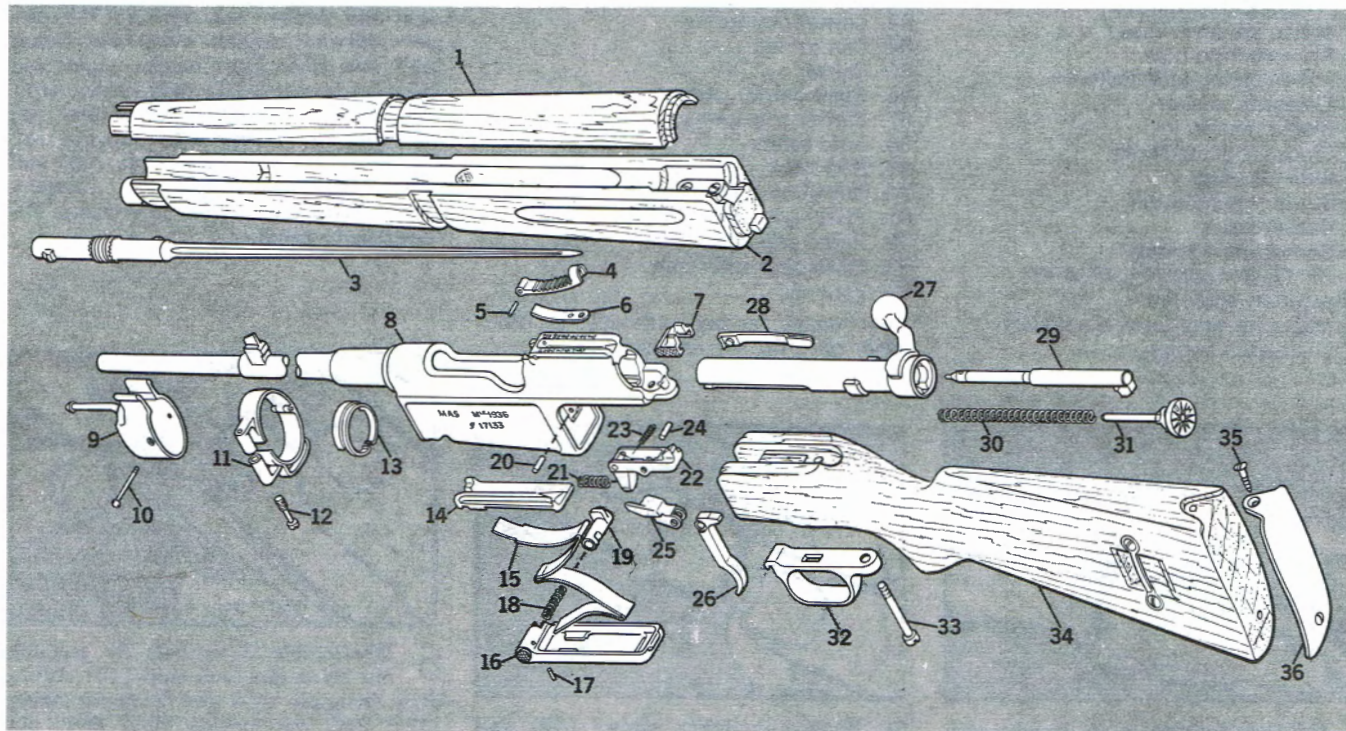
anism cocks on opening of the bolt. Dual locking lugs on the bolt engage locking recesses within the receiver bridge. Handle of the bolt is bent forward to place the knob opposite the trigger. The firing pin assembly is concealed within the bolt, and there is no visible means of determining whether the action is cocked or not. There is no mechanical safety or magazine cutoff.

Magazine box is integral with the receiver. Cartridges enter the magazine in staggered fashion and are forced upward by the follower and follower spring which are attached to the magazine floorplate. The magazine floorplate assembly is readily detached from the action by depressing a spring plunger.

Other notable features of the Model 1936 rifle are the cruciform needle bayonet housed within the fore-end, the separate buttstock and fore-end, and the simple, effective means of adjusting the aperture rear sight for elevation.



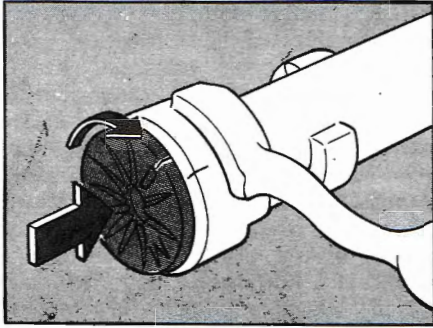
**1** The trigger controls the bolt stop-ejector (25). To remove the bolt, pull it to the rear and pull back hard on the trigger (26). To raise or lower the rear sight, push the rear sight leaf (4) down and move the rear sight slide (7) to the desired position.



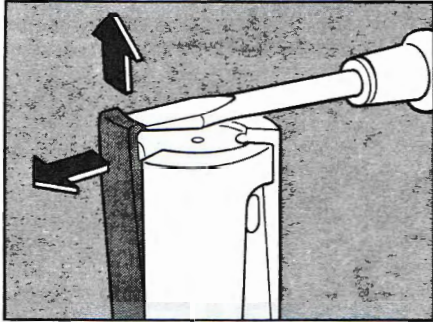
## Parts Legend

- |                      |                       |                      |                       |                         |
|----------------------|-----------------------|----------------------|-----------------------|-------------------------|
| 1. Handguard         | 8. Barrel and action  | 14. Follower         | 21. Sear spring       | 29. Firing pin          |
| 2. Fore-end          | 9. Front band         | 15. Follower spring  | 22. Sear              | 30. Firing pin spring   |
| 3. Bayonet           | 10. Front band screw  | 16. Floorplate       | 23. Bolt stop spring  | 31. Bolt head           |
| 4. Rear sight leaf   | 11. Middle band       | 17. Latch pin        | 24. Trigger pin       | 32. Trigger guard       |
| 5. Rear sight pin    | 12. Middle band screw | 18. Latch spring     | 25. Bolt stop-ejector | 33. Guard screw         |
| 6. Rear sight spring | 13. Handguard support | 19. Floorplate latch | 26. Trigger           | 34. Buttstock           |
| 7. Rear sight slide  |                       | 20. Sear pin         | 27. Bolt              | 35. Buttplate screw (2) |
|                      |                       |                      | 28. Extractor         | 36. Buttplate           |

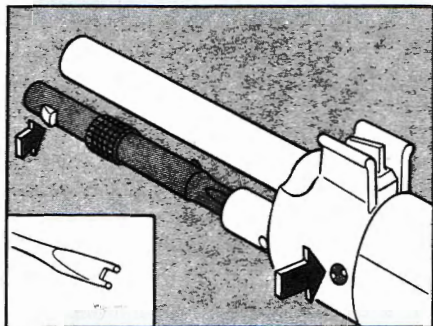




**2** To disassemble the bolt, push in on the bolt head (31) and rotate it clockwise until the letter "D" on the bolt head lines up with the line on the bolt (27). Do this carefully, since the bolt head is under spring tension. With the bolt head out, the firing pin spring (30) and firing pin (29) can be removed.



**3** The extractor (28) does not rotate around the bolt. It is machined to fit into a dovetail slot in the bolt. To remove the extractor, push it out as shown until the small boss on the extractor is clear of the hole in the bolt. Then pry the extractor up and out of its slot. To replace the extractor, tap it in with a brass or plastic hammer until it stops. Then push the boss clear of the bolt face and drive it down until it snaps into place.



**4** To further disassemble the rifle, it is necessary to make a special tool to remove the screws. Grind a screwdriver as shown in the insert. The 2 prongs must fit the notches in the screw head. Then the screws can be removed in the same manner as a normal slotted-head screw. Push in small latch to remove the bayonet (3) from its socket. ■



**T**HE most successful of several German semi-automatic rifles introduced during World War II was the Model 43 cal. 8 mm. Mauser developed by the Walther Arms Co. Initially designated Gewehr 43 (Rifle 43) and later Karabiner 43 (Carbine 43), this rifle was used principally for sniping. It is well suited for this as it is very accurate, is adapted to a detachable 4X scope, and shares the advantage, with other semi-automatic rifles, that there is no body motion required for operation of the action that might betray the firer's position.

The simple, effective gas system of this rifle is like that of the Soviet Tokarev semi-automatic rifle. It is

above the barrel, can be easily disassembled without tools, and is unusual in that the piston is fixed and the cylinder movable. The 10-round magazine is detachable and can be loaded singly or with two 5-round clips. The non-rotary bolt with forward dual locking lugs was copied from the German Model 41 (W) rifle. Made separate from the bolt, the lugs are cammed into and out of locked position by the firing pin housing which is actuated by the bolt carrier. This is a rather complex system, but it works well.

There is no provision for attaching a bayonet to this rifle, and the fore-end is relatively short like a sporter. Despite the short fore-end, the rifle is

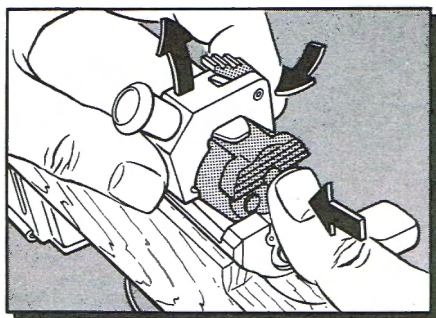
fairly heavy because of its laminated beechwood stock. The weight, however, feels less than it actually is because of the favorable weight distribution.

Made strictly for utility, all except a few early Model 43 rifles appear very crude, and show evidence of hasty manufacture. It is obvious that this rifle was designed for cheap, easy manufacture. It employs many sheet steel parts. No attempt was made to smooth several of the exterior metal parts, but a fairly good finish was employed where required for proper functioning. Despite this lack of refinement, this rifle is serviceable and efficient, and well suited for the job it was intended to perform.

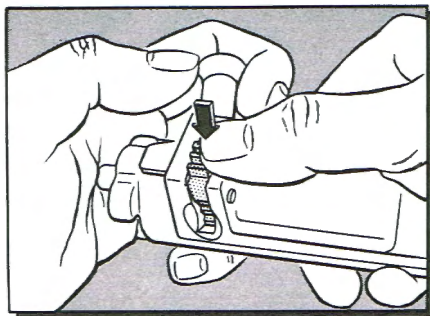


# GERMAN MODEL 43 RIFLE

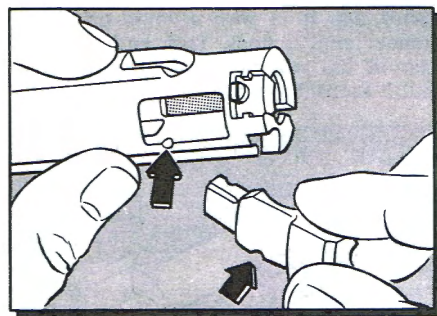
By EDWARD J. HOFFSCHMIDT



**1** Press magazine catch (40) forward and remove magazine (39). In replacing magazine, insert upper front portion all the way into opening in stock, and then swing rear upward until latched. Pull bolt carrier (24) to rear as far as it will go and press inward on right side of bolt carrier latch (20) to engage latch with shoulder on bolt housing (26). Rotate safety (28) all the way right to engaged position. Press forward on rear recoil spring guide (17) with thumb as shown, simultaneously lift rear of bolt assembly and remove from receiver. Rifles of later manufacture do not have the bolt carrier latch. To disassemble, remove magazine, cock rifle by pulling bolt carrier to rear and letting it go forward, engage safety and, while holding bolt carrier about .4" to rear, press forward on rear recoil spring guide, lift upward on rear of bolt housing and remove from receiver. Pull the bolt carrier to the rear, remove the bolt carrier and bolt from the receiver, and lift the carrier off bolt

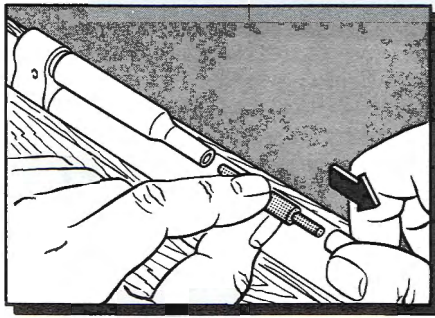


**2** Great care must be taken in disassembly and assembly of bolt components of rifles with bolt carrier latch, as the parts are under heavy spring pressure. Hold bolt assembly in left hand as shown with rear of bolt housing against palm of hand and left index finger looped around handle of bolt carrier. Pull bolt carrier slightly to rear and at same time depress top of bolt carrier latch with right thumb. Grip bolt carrier in right hand, and ease carrier forward to separate from bolt housing. Lift the bolt carrier off bolt, and pull the assembled front and rear recoil springs with the guides forward out of the bolt housing

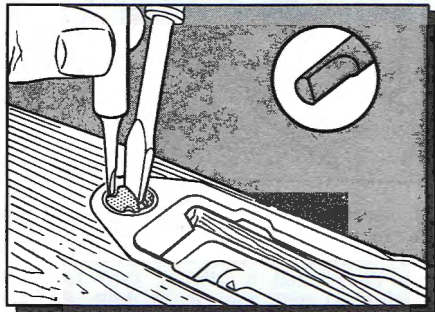


**3** Pull firing pin housing (11) rearward out of bolt, remove locking lugs (6 & 7), drift firing pin retainer (12) almost completely out of firing pin housing, and remove firing pin (13) and firing pin extension (14). Rifles of later manufacture have a spring-loaded firing pin retainer, and to remove firing pin housing from bolt it is necessary to depress retainer from left side. In replacing locking lugs, right locking lug (6) has a small notch as shown to clear a projection on bolt. This prevents improper assembly of lugs. In reassembly be sure to replace locking lugs, as firing rifle without them would be dangerous. To remove extractor (8), use small screwdriver to depress extractor retainer (10) and rotate it counter-clockwise ¼ turn until it releases. Then slide extractor out of bolt

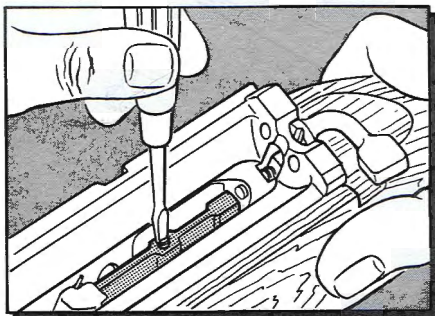




**4** To disassemble gas system, use punch, cartridge nose, or small screwdriver to depress band retainer (57A) projecting through hole in right of barrel band (57). Slide barrel band forward and lift off handguard (1). If bolt assembly is in rifle, insert empty magazine, and pull bolt rearward so that it latches in open position. Pull rearward on actuator rod (35) as shown, lift out connecting rod (36), ease actuator rod forward, and remove it with actuator rod spring from receiver. Then slide gas cylinder (37) rearward off gas piston (38)



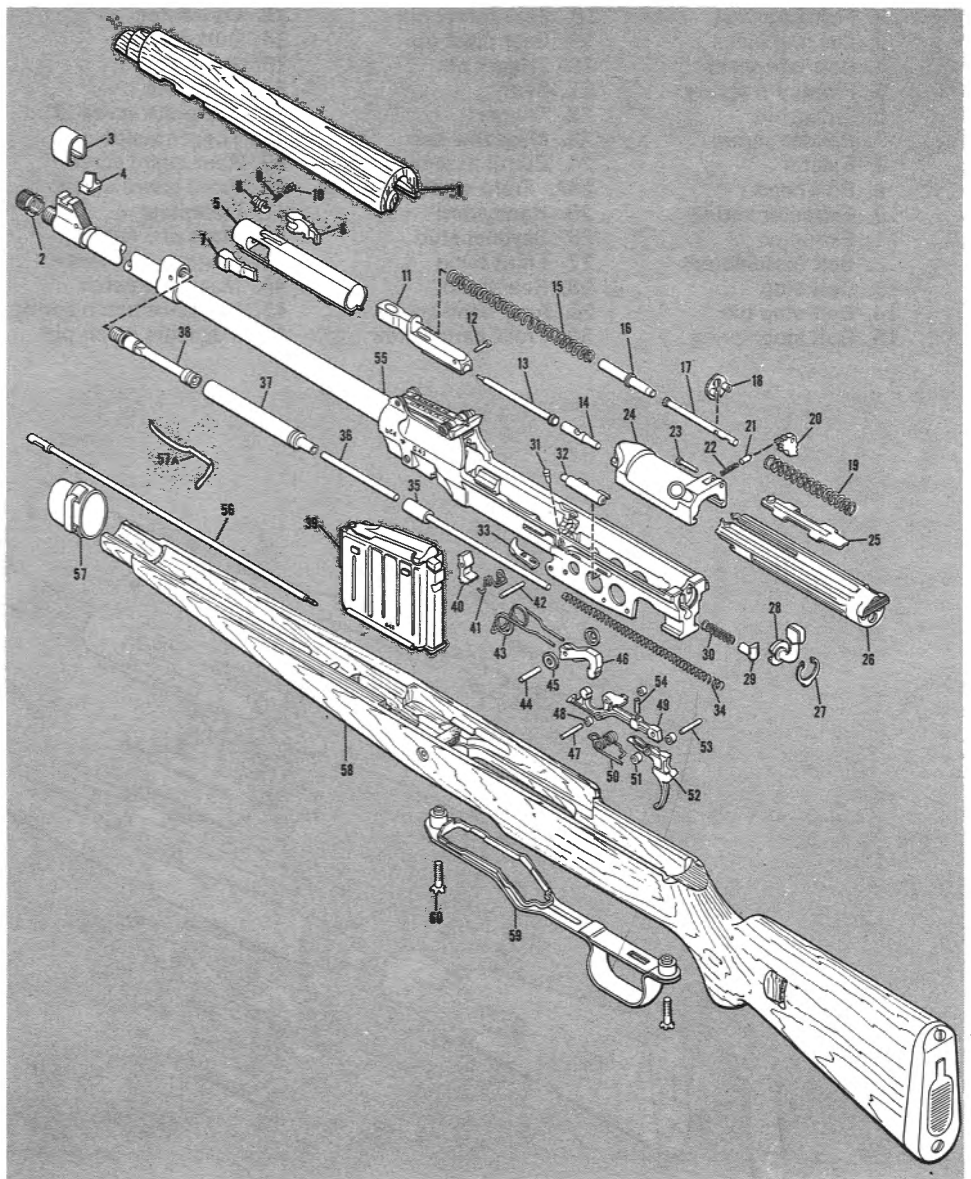
**5** Front and rear trigger guard screws (60) are locked by spring-loaded pins in trigger guard (59). The pins engage notches on screw heads and must be depressed with a small-diameter punch or specially shaped punch (see inset). After turning out screws, hold magazine catch forward, lift off trigger guard, and separate stock from barrel and receiver



**6** Unlike most military rifles, the Model 43 has an adjustable trigger pull. When the bolt assembly is removed, a trigger adjusting screw (54) in the sear (49) can be turned to minimize the amount of creep in the final stage of the pull

## Parts Legend

1. Handguard
2. Thread protector
3. Sight hood
4. Front sight
5. Bolt
6. Locking lug, right
7. Locking lug, left
8. Extractor
9. Extractor spring
10. Extractor retainer
11. Firing pin housing
12. Firing pin retainer
13. Firing pin
14. Firing pin extension
15. Recoil spring, front
16. Spring guide, front
17. Recoil spring guide, rear
18. Bolt housing retainer
19. Recoil spring, rear
20. Bolt carrier latch
21. Latch plunger
22. Latch spring
23. Bolt carrier latch pin
24. Bolt carrier
25. Sliding dust cover
26. Bolt housing
27. Safety retainer
28. Safety
29. Safety plunger
30. Safety spring
31. Ejector pin
32. Ejector spring housing
33. Ejector
34. Actuator rod spring
35. Actuator rod
36. Connecting rod
37. Gas cylinder
38. Gas piston
39. Magazine
40. Magazine catch
41. Magazine catch spring
42. Magazine catch pin
43. Hammer spring
44. Hammer pin
45. Hammer washers (2)
46. Hammer
47. Sear pin
48. Sear spacers (2)
49. Sear
50. Sear spring
51. Trigger spacers (2)
52. Trigger
53. Trigger pin
54. Trigger adjusting screw
55. Barrel and receiver
56. Cleaning rod
57. Barrel band
- 57A. Band retainer
58. Stock
59. Trigger guard
60. Trigger guard screws (2)







# German Model 98/40 Rifle

By EDWARD J. HOFFSCHMIDT

ONE of the substitute standard rifles adopted by Germany in 1940 was the Model 98/40. Produced in Budapest, Hungary, this rifle was developed from the Hungarian Model 35, a Mannlicher-type turnbolt rifle with protruding box magazine and 2-piece stock. The 98/40 is similar to the Hungarian 35 except that it is adapted to the 8 mm. Mauser cartridge, employs a Mauser-type magazine flush with the stock, has a turned-down bolt handle, and is adapted to a German sling and bayonet.

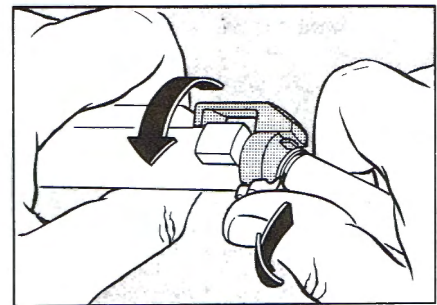
The Germans adopted this rifle because they needed a large supply of rifles in a hurry. They utilized existing production facilities wherever these were available.

The 98/40 is sturdy and reliable, but its forward-positioned bolt handle makes it inferior to the Mauser 98 for rapid-fire shooting.

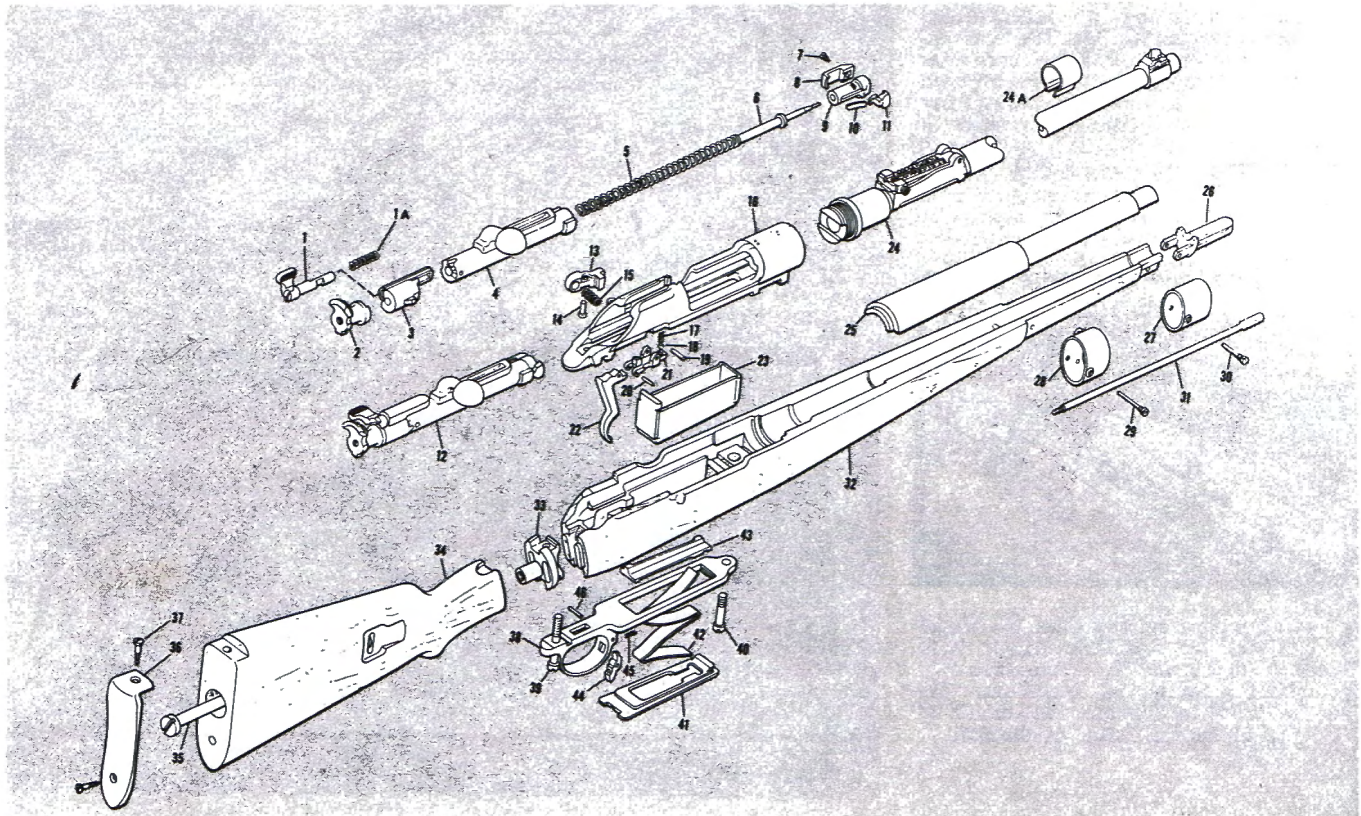
Early 98/40 specimens show excellent workmanship and finish. Later specimens of the 98/40 are not as well finished, but they are serviceable.

## Parts Legend

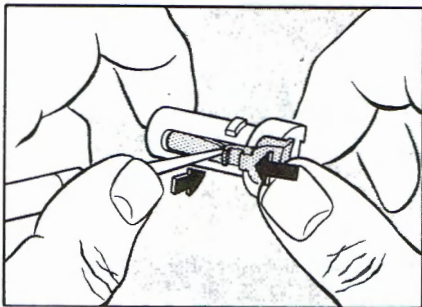
- |                      |                        |                           |
|----------------------|------------------------|---------------------------|
| 1. Safety            | 16. Receiver           | 31. Cleaning rod          |
| 1A. Safety spring    | 17. Sear spring        | 32. Stock                 |
| 2. Firing pin nut    | 18. Sear safety pin    | 33. Connector             |
| 3. Cocking piece     | 19. Sear pivot pin     | 34. Buttstock             |
| 4. Bolt (stripped)   | 20. Trigger pin        | 35. Stock bolt            |
| 5. Firing pin spring | 21. Sear               | 36. Buttplate             |
| 6. Firing pin        | 22. Trigger            | 37. Buttplate screw (2)   |
| 7. Ejector screw     | 23. Magazine box       | 38. Trigger guard         |
| 8. Ejector           | 24. Barrel assembly    | 39. Rear guard screw      |
| 9. Bolt head         | 24A. Front sight cover | 40. Front guard screw     |
| 10. Extractor spring | 25. Handguard          | 41. Floorplate            |
| 11. Extractor        | 26. Bayonet stud       | 42. Magazine spring       |
| 12. Bolt (assembled) | 27. Front band         | 43. Magazine follower     |
| 13. Bolt stop        | 28. Rear band          | 44. Magazine catch        |
| 14. Bolt stop pin    | 29. Rear band screw    | 45. Magazine catch spring |
| 15. Bolt stop spring | 30. Front band screw   | 46. Magazine catch pin    |



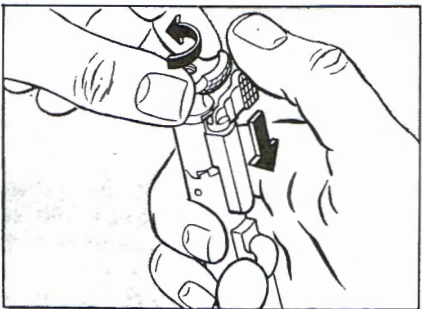
**1** Remove bolt assembly while pushing in bolt stop (13). Push the extractor (11) outward so that bolt head assembly can be rotated a quarter turn to align ejector (8) with the rib on bolt. Pry extractor out a bit further with a cartridge case, and pull bolt head free of bolt.



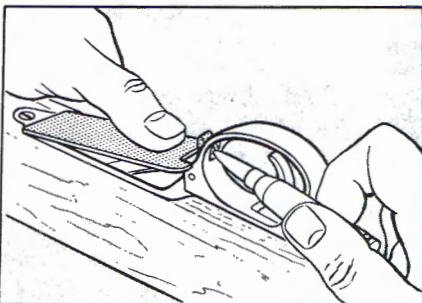




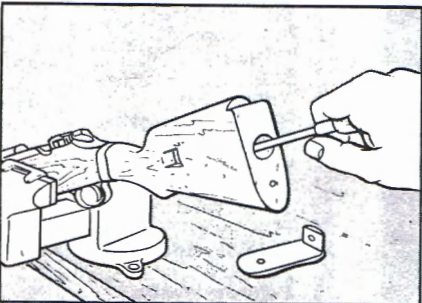
**2** Remove ejector screw (7) and ejector (8). Then remove extractor (11) by pushing extractor spring (10) in until it is free of notch in underside of extractor. Push extractor to rear and remove from bolt head (9). Lift out extractor spring.



**3** After bolt head has been removed, firing pin (6) and spring (5) can be removed by holding firing pin point against a wood block, grasping bolt firmly, pushing down on safety with thumb, unscrewing firing pin nut (2), and removing cocking piece. Be careful as firing pin is under spring tension. Hold bolt tight and ease it off firing pin. In reassembly, align flat on firing pin with flat in cocking piece.



**4** Magazine floorplate (41), follower (43), and spring (42) can be removed by pressing in on magazine catch (44) with bullet point or a thin punch.



**5** To remove buttstock (34), take off buttplate (36). Use long screwdriver to remove stock bolt (35). Connector (33) can be removed only when receiver and trigger guard (38) are separated, since it is held by rear guard screw (39).

## An Inexpensive Rifle Case

**T**HIS wood rifle case can be easily assembled in an evening after all pieces are cut to size. Dimensions given accommodate rifles with 24" barrels.

Assemble top and bottom of the case separately, starting with sides and ends. Apply glue liberally to joints and secure with 1 1/4" brads. Plywood top and bottom are glued and nailed with 5/8" nails 1 1/2" apart. Use 2" finishing nails in the ends. Round all corners and clamp the completed top and bottom sections together for sanding. Fill any nicks with Plastic Wood and resand.

Join top and bottom with brass hinges, and glue 1/16"x3/4" felt weather stripping to the contacting edges of each section.

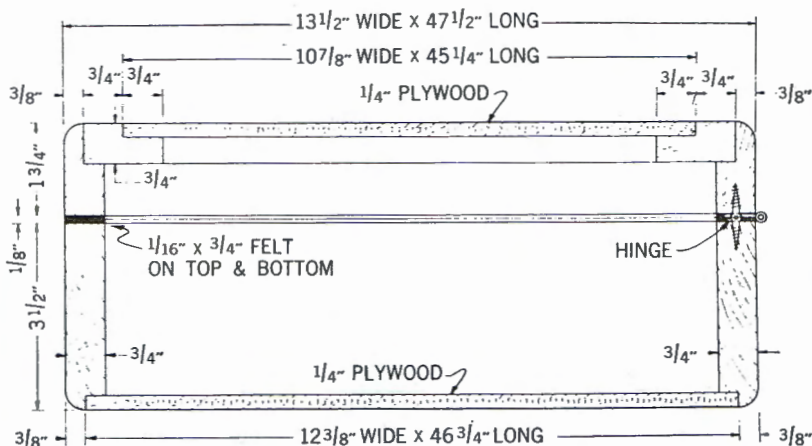
Supporting-block size and place-

ment varies with different rifles and scopes. Blocks are made so rifles overlap slightly. To locate blocks, lay the bottom rifle in place, allowing 1" clearance between the scope and the side of the case. Place the appropriately shaped blocks so that they lock the rifle in place. Nail or screw and glue the blocks in place. Glue felt padding to blocks and glue 6" square of foam rubber on bottom of case to pad buttstock of bottom rifle. Attach another piece 1 1/2"x5" under receiver.

Lid blocks are positioned in the same manner. Blocks in top section are sawed to fit buttstock curve and to prevent shifting.

Attach luggage fasteners and luggage handle. Finish as desired.

—RICHARD H. STANSFIELD



Cross section of wood rifle case.

### Lumber for Top:

2 pcs. 3/4" x 1 3/4" x 47 1/2"  
2 pcs. 3/4" x 1 3/4" x 12 3/8"  
2 pcs. 3/4" x 1 1/2" x 46 3/4"  
2 pcs. 3/4" x 1 1/2" x 107 7/8"  
1 pc. plywood, 1/4" x 107 7/8" x 45 1/4"

### Lumber for Bottom:

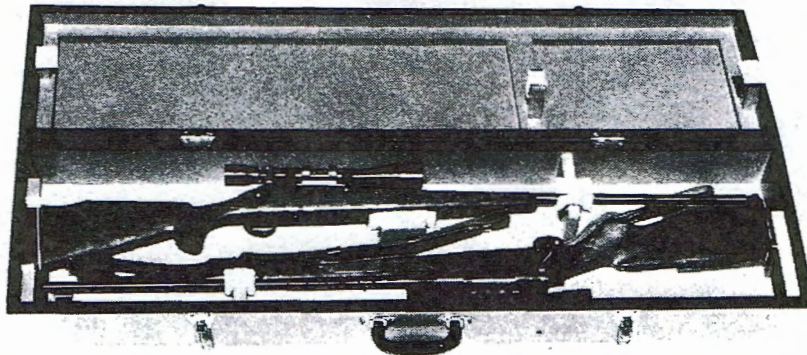
2 pcs. 3/4" x 3 1/2" x 47 1/2"

2 pcs. 3/4" x 3 1/2" x 12 3/8"

1 pc. plywood, 1/4" x 12 3/8" x 46 3/4"

### Other Materials:

Brads, 5/8" common nails, 2" finishing nails, glue, 2 brass hinges, 2 brass luggage fasteners, 1 luggage handle, 21 ft. of 1/16" x 3/4" felt weather stripping, 1 sq. ft. of felt, 1 sq. ft. of 1/4" foam rubber.





# The Italian Carcano Rifle



By Edward J. Hoffschmidt

**I**N the 1890's Italy desired a modern smokeless-powder military rifle to replace the obsolete Vetterli-Vitali. Lt. Col. Salvatore Carcano and Col. G. Parravicino developed it. The resulting gun incorporates Mauser features in the action and has a Mannlicher-type feed system. It was made in several models, such as 1891 rifle and carbine, and above illustrated 1938 short rifle. The disassembled one is the 1891 carbine. All are mechanically the same.

When compared with its contempo-

raries, the Carcano is not a poor gun. The bolt design, with solid head and fixed extractor, is extremely simple. There is no third locking lug, but the bolt handle locks forward of the receiver ring and acts as a safety lug.

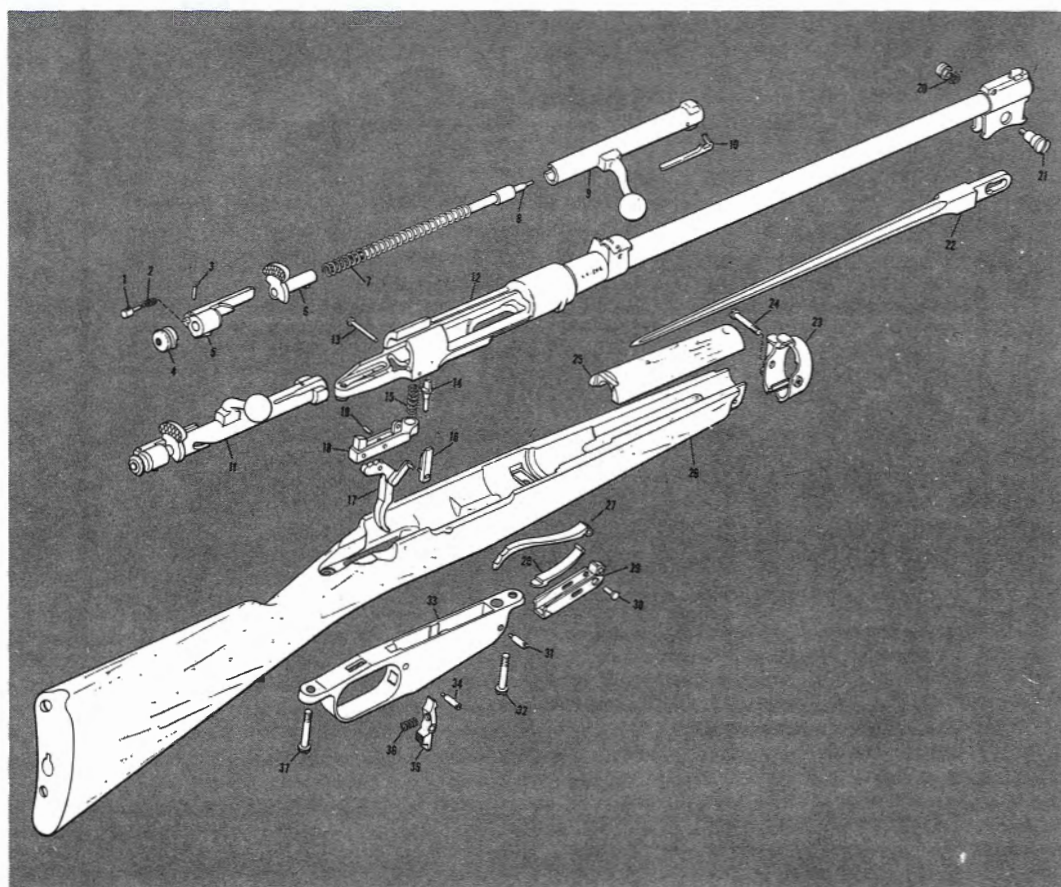
## Disposable clip required

A disposable clip is a necessary part of the feed system. A 6-shot-capacity steel or brass clip is retained by a latch in the magazine well. The spring-loaded follower forces the cartridges up into

the path of the bolt. While the system lends itself to rapid loading and unloading, the gun becomes a single-shot if only loose ammunition is available.

Mannlicher-Carcano rifles are sometimes erroneously called Terni rifles. The name R. E. Terni is commonly stamped into the stock. Actually the Terni plant was only one of a number of plants that manufactured Carcano parts and assembled the guns.

Mannlicher-Carcano rifles and carbines are found commonly in 2 cali-



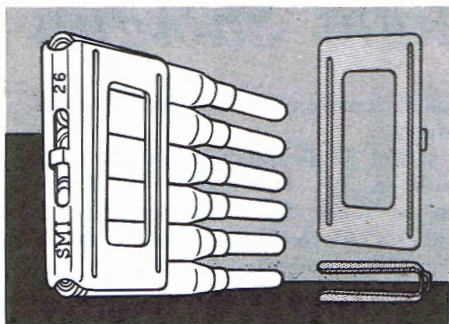
## Parts Legend

1. Cocking piece nut retainer
2. Retainer spring
3. Retainer pin
4. Cocking piece nut
5. Cocking piece
6. Safety catch
7. Firing pin spring
8. Firing pin
9. Bolt
10. Extractor
11. Assembled bolt
12. Carbine barrel and receiver
13. Sear pin
14. Ejector
15. Sear spring
16. Bolt stop
17. Trigger
18. Sear
19. Trigger pin
20. Plunger and spring
21. Bayonet hinge
22. Bayonet
23. Front band
24. Front band screw
25. Handguard
26. Carbine stock
27. Follower
28. Follower spring
29. Follower housing
30. Follower hinge pin
31. Housing retainer screw
32. Front guard screw
33. Trigger guard & magazine
34. Clip latch pin
35. Clip latch
36. Clip latch spring
37. Rear guard screw

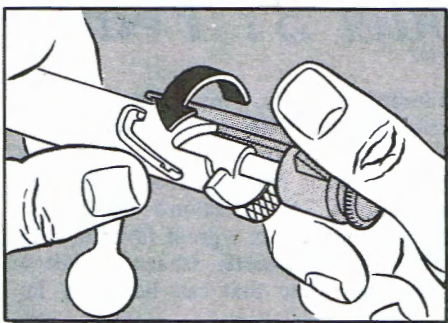


bers, 6.5 mm. and 7.35 mm. In the late 1930's the 6.5 mm. cartridge case was revised to handle a cal. 7.35 mm. bullet. Although the cal. 7.35 mm. cartridge was a better military round, the Italians went back to the 6.5 mm. before the end of World War II.

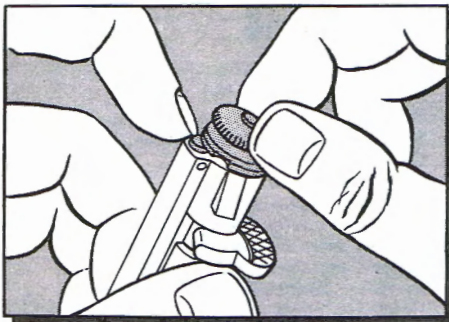
Italian Carcano rifles usually show a great deal of rough hand finishing. The safety catch is awkward and trigger pull uniformly hard. Cal. 6.5 mm. Carcanos are rifled with a progressive twist, but cal. 7.35 mm. rifles have a constant rifling twist.



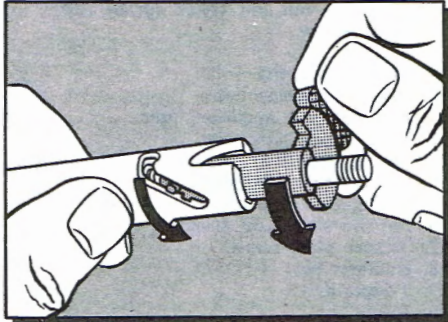
**1** A 6-shot clip is a necessary part of the Mannlicher-style feed mechanism. The packet of cartridges is pressed into the magazine well until caught by the latch. To unload gun, open bolt and press clip latch (35). The empty clip falls out bottom of magazine as last round is fed



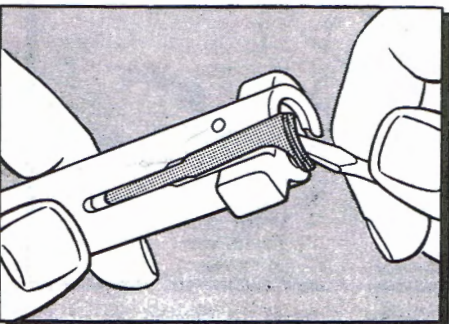
**2** The Carcano has a simple bolt stop (16). To remove bolt, pull it to rear and at same time pull trigger. To disassemble bolt, rotate cocking piece (5) to fired position as shown. This relieves tension on firing pin spring (7)



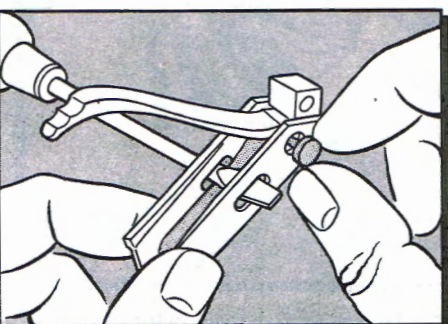
**3** Although it is possible to remove the entire firing pin assembly by rotating the safety catch as illustrated in Fig. 4, it is safer to disassemble the firing mechanism in the bolt. To do so, first push down cocking piece nut retainer (1) and unscrew cocking piece nut (4)



**4** After cocking piece nut and cocking piece have been removed, push safety catch (6) forward slightly until the small lug is free of its bayonet-type notch in the bolt. Rotate safety and ease it down cam groove until it drops into small notch near end of cam groove. Turn small lug into this notch and pull safety free of bolt. Then remove firing pin (8) and spring (7)



**5** Extractor should not be removed unless absolutely necessary. Tail of extractor is peened or hammered to the bolt to help retain it. If peened too tightly, it may snap off if an attempt is made to pry it out as shown. Round hole in bolt and small slot beneath extractor are only outlets provided for gas escape



**6** Follower (27) is operated by a very powerful spring (28). To replace follower hinge pin (30), it is necessary to compress this spring to align the pin. To do so, insert a screwdriver through slots in follower housing (29). Drive it in until follower spring is compressed enough to allow follower some freedom of motion ■

## A MAN TO REMEMBER

### JOSEPH MANTON

#### *Invented the Tube Lock*

Born—London, England, 1766

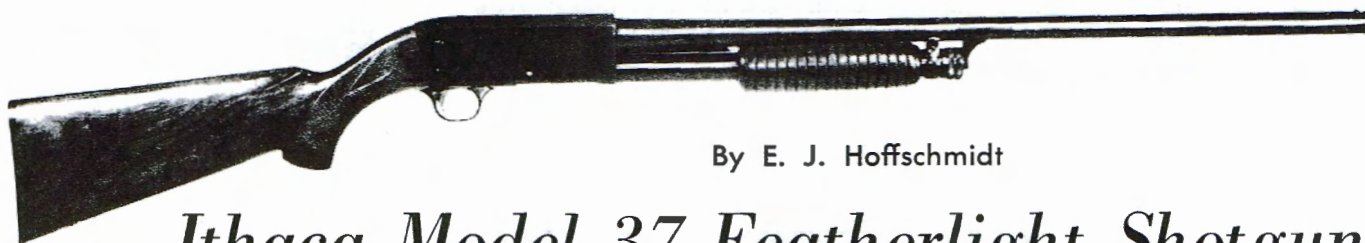
Died—London, England, 1835

**J**OSEPH MANTON and his elder brother John were two of the most famous London gunsmiths of their time. Both made fowling pieces and large-caliber rifles, but Joseph was especially noted for his high-quality cased pistols. John set up his shop first at 6 Dover St., London. Joseph set up his shop separately at 27 Dover St., Berkeley Square, a few years later in 1795.

Besides being a fine craftsman, Joseph Manton was devoted to the improvement of firearms, and he made many contributions to the betterment of firearms design. A number of these improvements met with little favor despite their virtues, and a few led to litigation and considerable controversy. Perhaps the most widely accepted of Manton's designs was the elevated rib for sighting double-barrel arms, and second was his patent breech complete with drain hole, which made it possible for double-barrel guns to be constructed in a more streamlined form. Less popular were his V-shaped priming pan and his gravitational safety stop designed to prevent the accidental discharge of a gun while a charge was being rammed home.

Most controversial of all were Manton's contributions to the development of the percussion ignition system. In 1816 he patented a percussion pellet lock which Forsyth claimed was an infringement on his patent, and in the suit which followed Forsyth won. Thereafter Manton turned to the tube lock and obtained a patent on it in 1818. Again Forsyth sued, but his patent was about to expire, and although the court found in his favor, Manton was soon able to put his lock into production. Finally, Manton's friends also advanced him as having developed the true percussion cap. If he did so, he failed to patent it, and the claim is generally disregarded today.—  
HAROLD L. PETERSON.





By E. J. Hoffschmidt

## Ithaca Model 37 Featherlight Shotgun

**T**HE Ithaca Gun Co. of Ithaca, N. Y., started manufacturing guns in a small wood building on the banks of Fall Creek in 1880. Their first model was a 12-ga. hammer gun, and from this they evolved a series of single- and double-barrel shotguns. Although they have manufactured M1911A1 automatic pistols, M6 survival weapons, and M3A1 sub-machine guns under World War II government contracts, and are currently producing a cal. .22 rifle, their reputation has been built on their trap guns, their double-barrel guns, and the Model 37 Featherlight slide-action shotgun.

The Featherlight was first offered in 1937. It won immediate acclaim since it was a good pound lighter than its nearest competitor. This weight reduction was accomplished by clever design rather than by the use of light alloys. The number of operating parts was kept to a minimum and they were lightened where possible.

As with most slide-action shotguns, the bolt has no locking lugs or separate locking block. The slide tips the end of the bolt up as it is pulled forward. When the end of the bolt is locked into the top of the receiver, the slide supports it from below to prevent unlocking.

Another good design feature is the bottom ejection system which prevents rain from getting into the gun when

handled normally. This system also provides a good safety factor since it protects the face from brass particles or powder burns resulting from defective-shell bursts. Since ejection is downward, the Featherlight is a great favorite with left-handed shooters. Ithaca makes a left-hand safety that can be easily in-

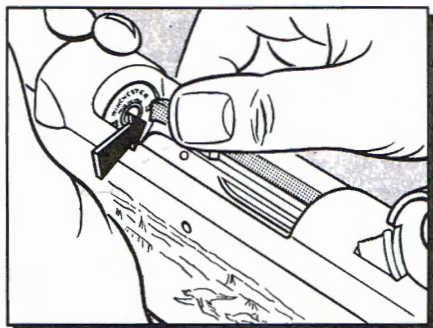
stalled in place of the normal right-hand safety.

Model 37 Featherlight shotguns are made in 20-, 16-, and 12-ga. Barrel lengths range from 20" for the riot gun, to 30" for trap or duck hunters. The 5-shot magazine is easily plugged to conform with Federal law.

### Parts Legend

- |                                       |                                     |
|---------------------------------------|-------------------------------------|
| 1. Barrel                             | 30. Slide stop spring (bottom)      |
| 2. Magazine nut pin*                  | 31. Trigger spring                  |
| 3. Magazine nut                       | 32. Trigger                         |
| 4. Magazine nut pin check screw*      | 33. Slide pin                       |
| 5. Magazine nut pin catch spring*     | 34. Slide pin spring                |
| 6. Magazine nut pin check spring cap* | 35. Slide                           |
| 7. Yoke screw                         | 36. Slide pin check pin             |
| 8. Yoke                               | 37. Hammer bar                      |
| 9. Magazine spring                    | 38. Hammer bar pin                  |
| 10. Magazine spring cup               | 39. Hammer                          |
| 11. Receiver and magazine tube        | 40. Slide stop                      |
| 12. Slide handle assembly             | 41. Slide stop release spring (top) |
| 13. Spring shell stop (left)          | 42. Carrier                         |
| 14. Spring shell stop spring          | 43. Bottom extractor                |
| 15. Spring shell stop screw           | 44. Bottom extractor spring         |
| 16. Positive shell stop (right)       | 45. Positive extractor spring cap   |
| 17. Trigger plate screw               | 46. Positive extractor spring       |
| 18. Hammer pin                        | 47. Positive extractor (top)        |
| 19. Trigger pin                       | 48. Extractor hinge pin (bottom)    |
| 20. Safety                            | 49. Firing pin check pin            |
| 21. Safety catch spring               | 50. Firing pin spring               |
| 22. Safety catch                      | 51. Firing pin                      |
| 23. Mainspring cup                    | 52. Breechblock                     |
| 24. Mainspring                        | 53. Stock                           |
| 25. Mainspring cap                    | 54. Buttplate and screws            |
| 26. Stock bolt                        | 55. Carrier screw (2)               |
| 27. Stock washers                     | 56. Carrier screw lock screw (2)    |
| 28. Mainspring stop                   |                                     |
| 29. Trigger plate                     |                                     |

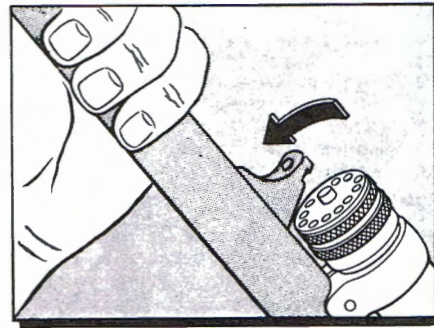
\* Not used in guns made after 1954



**1** Before attempting to remove barrel, unload magazine and chamber. To empty magazine, push in spring shell stop (13) on inside of receiver as shown. Ease rounds out one by one. Pull back on slide release on forward side of trigger guard and pull back slide handle to empty chamber

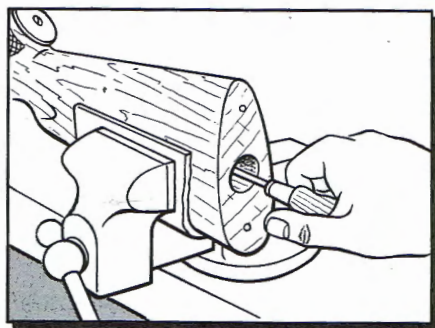
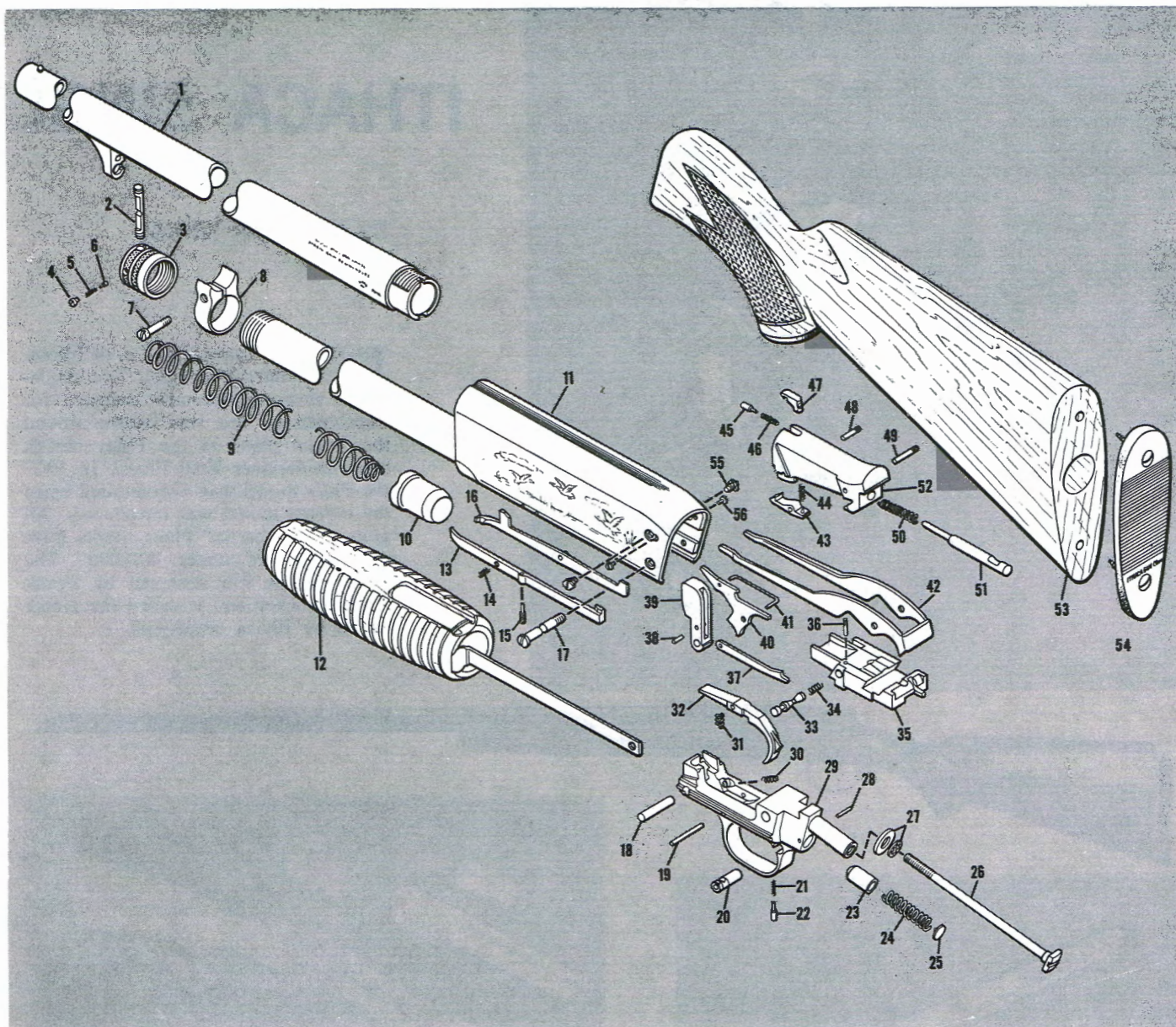


**2** To remove barrel (1), pull back on slide release on forward side of trigger guard and pull slide handle assembly (12) to rear to open breech. Pull up magazine nut pin (2) and use it as a lever to rotate magazine nut (3) until projection on it is free of barrel lug. (Magazine nut pin furnished only on guns built prior to 1955. On later built guns having no pin, simply rotate magazine nut in direction shown)

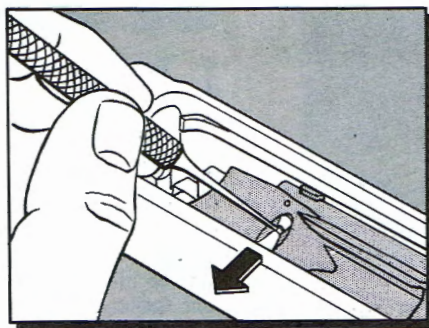


**3** Barrel is joined to receiver by an interrupted thread. When magazine nut is free of barrel lug, give barrel 1/4-turn in direction shown and pull it free of receiver. Magazine tube and slide handle assembly remain attached to receiver

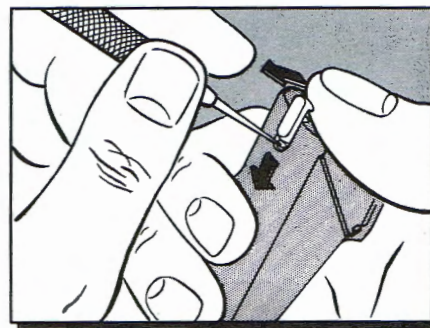




**4** Stock (53) must be removed before disassembling action. First remove buttplate screws and buttplate. Stock is attached to receiver by a long bolt (26) which has a square head with slot so that it can be removed with a long screwdriver or socket wrench



**5** With stock removed, remove trigger plate screw (17) and pull trigger plate group to rear and out of receiver. Remove 2 carrier screw lock screws (56) and carrier screws (55) from receiver. Hold receiver bottom up with magazine to left, and with punch or fingernail pull slide pin (33) toward body until slide bar can be pulled forward from engagement with slide (35). Pull slide, breechblock (52), and carrier (42) together to rear, out of receiver



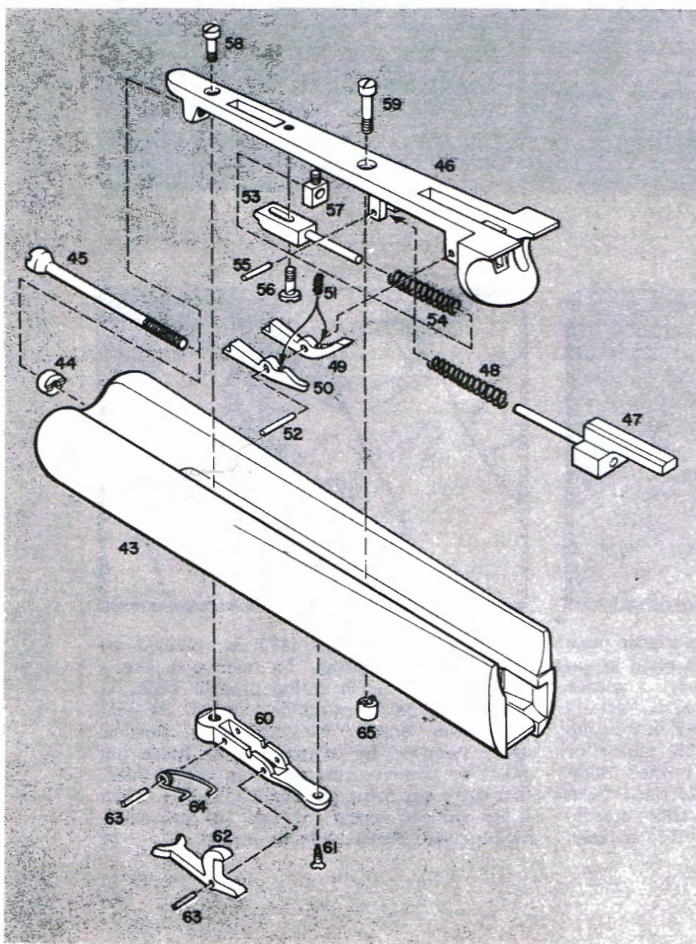
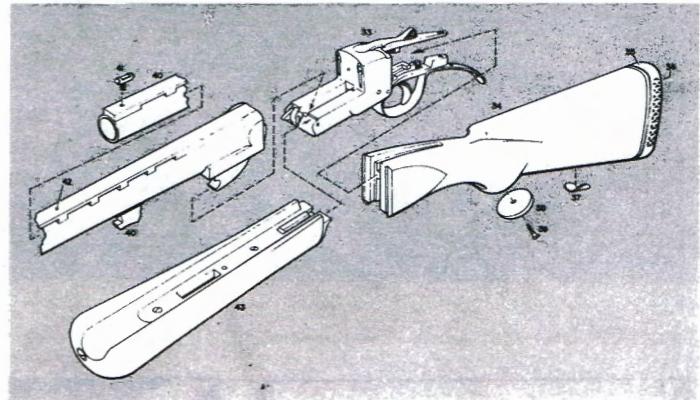
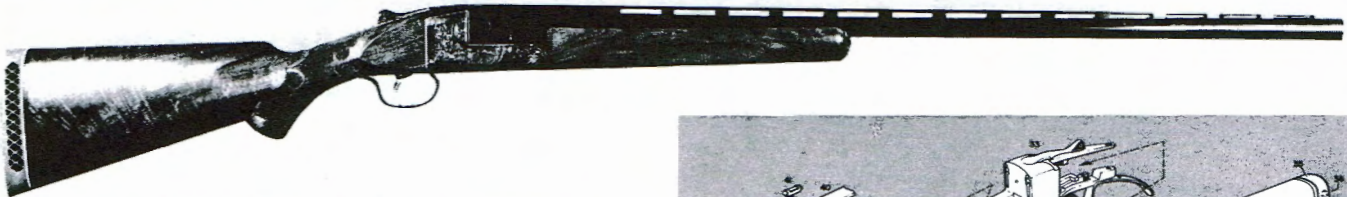
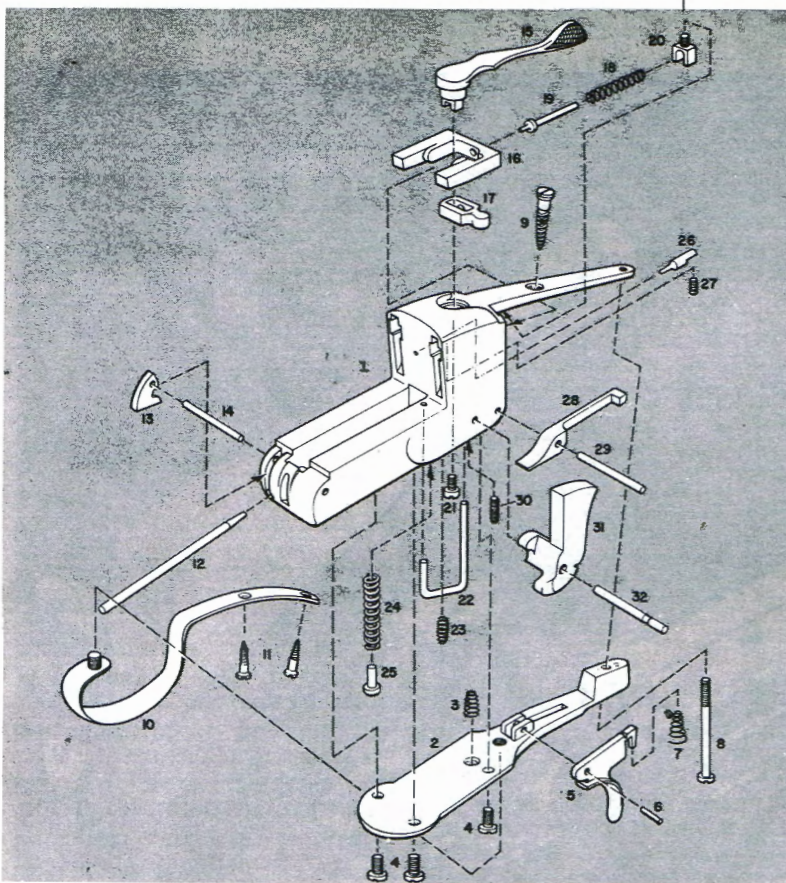
**6** Positive extractor (47) is retained by a powerful spring. To remove it, use a thin punch to push spring plunger back; at same time push extractor out of its seat as shown. Bottom extractor (43) can be easily removed by driving out its hinge pin (48). To remove firing pin from breechblock, first drive out firing pin check pin (49). Then firing pin and spring (51 and 50) can easily be removed. Reassemble in reverse



# ITHACA SINGLE

By JAMES M. TRIGGS

IN 1911 the Ithaca Gun Co. of Ithaca, N. Y., introduced their first single-barrel shotgun especially designed for trapshooting. This was known around the Ithaca plant as the Flues model, after its designer Emil Flues. In 1922 the Flues model was discontinued when the current model was introduced. All guns of the earlier Flues model have serial numbers under 400,000. The 1922 version was designed by Frank Knickerbocker and is called the Knick model by Ithaca employees.



**1** To take down gun, lift fore-end latch (62) and pull fore-end (43) down and back, freeing it from barrel and frame. Move top-lever (15) to right and tilt barrel down. Lift barrel (40) up off frame assembly (33). Reassemble in reverse order

**2** To disassemble fore-end assembly, remove fore-end latch escutcheon machine screw (58) and short fore-end machine screw (59) from top of fore-end iron (46). Remove long fore-end machine screw (45) from front end of fore-end (43). Fore-end iron may be lifted out of fore-end. Fore-end fastener bolt assembly (53) and spring (54) may be removed by unscrewing fore-end fastener bolt screw (56). Kicker spring (48) may be removed after drifting out pin (55). Kicker retainer (49) and kicker sear (50) and springs (51) may be removed by drifting out pin (52).

Remove fore-end latch escutcheon flat-head wood screw (61). Remove fore-end latch escutcheon (60) from bottom of fore-end by knocking out gently with a punch or small screwdriver from top through fore-end latch escutcheon machine screw hole. Latch (62) and spring (64) may be removed by drifting out pins (63).

Reassemble in reverse order



# BARREL TRAP GUN

## A MAN TO REMEMBER

### C. M. SPENCER

*Invented popular Civil War repeating rifle*

*Born—Manchester, Conn., June 20, 1833  
Died—Hartford, Conn., Jan. 14, 1922*

**C**HRISTOPHER M. SPENCER contributed important inventions to many fields. From early youth he was associated with manufacturing. He quit school at the age of 14 and entered the shop of the Cheney silk mills in Manchester. In 1853 he went to Rochester and worked in a tool-building and locomotive shop to broaden his experience; then to the Colt armory at Hartford, and finally back to the Cheney mills. Here he obtained his first patent, for an automatic silk-winding machine.

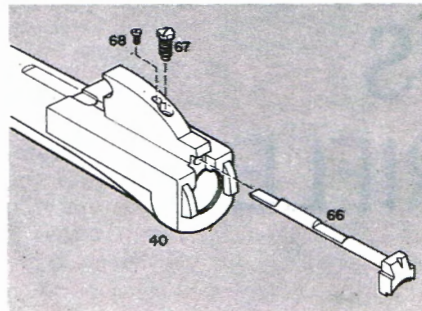
Ever since boyhood Spencer had had a passion for firearms, and he worked long and hard to perfect a repeating rifle. He succeeded in this endeavor, and on Mar. 6, 1860, obtained a patent for a 7-shot repeating arm with a tubular magazine in the stock. During the Civil War 200,000 Spencer rifles and carbines are believed to have been used in the field, and the soldiers who used them called it the finest gun in the service.

At the close of the War, Spencer went to Amherst, Mass., and was associated with Charles Billings in the Roper Arms Co. Unsuccessful in this venture, Spencer returned to Hartford and founded the Billings & Spencer Co. for the manufacture of drop forgings. He returned briefly to the manufacture of guns in 1882 when he organized a firm to manufacture a shotgun he had developed, but once again failed.

Outside the firearms field Spencer made a great name for himself in industrial design. He invented a screwmaking machine featuring an automatic turret lathe in 1873, and his work in drop forging is said to have done more for the art than that of anyone else, particularly in regard to the accuracy and application of the process. His machine screw operations and his automatic lathe business prospered and consumed his entire attention until his death.

—HAROLD L. PETERSON

**3** Breech end of barrel is shown here upside-down. To disassemble extractor mechanism, remove extractor check screw locking screw (68) and unscrew extractor check screw (67). Pull extractor (66) out rear of barrel. Reassemble in reverse order



### Disassembly Procedure

To disassemble frame and lock mechanism, take down gun as described in Fig. 1. To remove stock (34) move top-lever (15) to side and unscrew tang wood screw (9). Unscrew 2 trigger guard wood screws (11). Spring out rear end of trigger guard (10) slightly and unscrew trigger guard from trigger plate (2). With trigger guard removed, rear tang screw (8) can be removed from underside of trigger plate. Remove 3 trigger plate screws (4). Rapping stock gently with heel of hand will loosen trigger plate so it can be removed from bottom of frame (1). Do not attempt to pry trigger plate out of frame. Stock can be drawn off frame to rear. Trigger (5) can be removed from trigger plate by drifting out trigger pin (6).

Remove trip spring (23) and trip (22) from underside of frame. Drift out cocking cam pin (14) and remove cocking cam (13) and cocking rod (12) from front end of frame. Drift out sear pin (29) and remove sear (28). Remove hammer pin set screw (30) from underside of frame and drift out hammer pin (32). Remove hammer (31), mainspring (24), and mainspring cap (25) from frame. Compress action bolt spring (18) with end of screwdriver and slip spring and cap (19) out of seat in action bolt spring stop (20). Unscrew action bolt spring stop from underside of top tang. Remove top-lever screw (21) from underside of frame and lift top-lever out top of frame. Action bolt (16) with cam (17) can be slid out of frame to rear.

### Parts Legend

- |                                  |   |  |
|----------------------------------|---|--|
| 1. Frame                         | 30. Hammer pin set screw                        | 52. Kicker sear and re-tainer pin                  |
| 2. Trigger plate                 | 31. Hammer                                      | 53. Fore-end fastener bolt assembly                |
| 3. Sear spring                   | 32. Hammer pin                                  | 54. Fore-end bolt spring                           |
| 4. Trigger plate screw (3)       | 33. Frame and lock mechanism, complete assembly | 55. Kicker retainer pin                            |
| 5. Trigger                       | 34. Stock                                       | 56. Fore-end fastener bolt screw                   |
| 6. Trigger pin                   | 35. Recoil pad                                  | 57. Fore-end bolt guide                            |
| 7. Trigger spring                | 36. Recoil pad screws (2) (not shown)           | 58. Fore-end latch escutcheon machine screw        |
| 8. Rear tang screw               | 37. Gold oval (or shield) inlay                 | 59. Fore-end machine screw, short                  |
| 9. Tang wood screw               | 38. Grip cap                                    | 60. Fore-end latch escutcheon                      |
| 10. Trigger guard                | 39. Grip cap screw                              | 61. Fore-end latch escutcheon flat-head wood screw |
| 11. Trigger guard wood screw (2) | 40. Barrel                                      | 62. Fore-end latch                                 |
| 12. Cocking rod                  | 41. Ithaca Raybar front sight                   | 63. Fore-end latch lever and latch spring pin (2)  |
| 13. Cocking cam                  | 42. Rear sight (ivory bead)                     | 64. Fore-end latch spring                          |
| 14. Cocking cam pin              | 43. Fore-end                                    | 65. Fore-end machine screw round nut               |
| 15. Top-lever                    | 44. Fore-end long machine screw collar          | 66. Extractor                                      |
| 16. Action bolt                  | 45. Fore-end machine screw, long                | 67. Extractor check screw                          |
| 17. Action bolt cam              | 46. Fore-end iron                               | 68. Extractor check screw locking screw            |
| 18. Action bolt spring           | 47. Kicker                                      |  |
| 19. Action bolt spring cap       | 48. Kicker spring                               |  |
| 20. Action bolt spring stop      | 49. Kicker retainer                             |  |
| 21. Top-lever screw              | 50. Kicker sear                                 |  |
| 22. Trip                         | 51. Kicker sear and re-tainer spring (2)        |  |
| 23. Trip spring                  |   |  |
| 24. Mainspring                   |   |  |
| 25. Mainspring cap               |   |  |
| 26. Firing pin                   |   |  |
| 27. Firing pin check screw       |   |  |
| 28. Sear                         |   |  |
| 29. Sear pin                     |   |  |





# J. C. HIGGINS MODEL 33 RIFLE

By THOMAS E. WESSEL

THE J. C. Higgins Model 33 slide-action rifle, introduced in 1955, is produced by the High Standard Mfg. Corp., Hamden, Conn., for sale by Sears, Roebuck & Co. Of hammerless, tubular magazine construction, it shoots .22 long rifle, long, and short rimfire cartridges interchangeably, in both standard and high-velocity loadings. Magazine capacity is 25 short, 20 long, or 17 long rifle cartridges.

The Model 33 weighs 5 lbs. 2 ozs. and has an over-all length of 41¾". Barrel length is 23¼".

The receiver and guard assembly are lightweight alloy. The receiver is grooved for tip-off scope mounts. Stock and fore-end are American walnut.

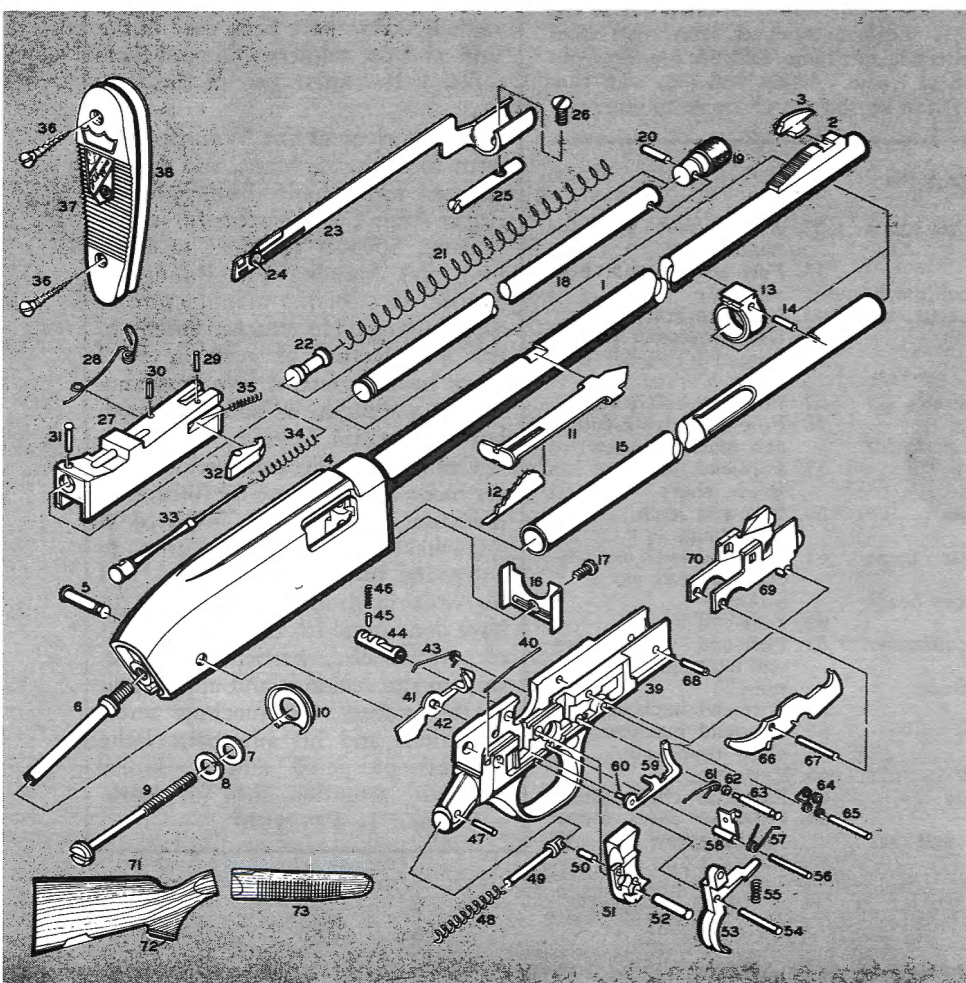
## Parts Legend

1. Barrel
2. Front sight ramp \*
3. Front sight
4. Receiver
5. Trigger guard retaining pin
6. Receiver tang
7. Stock bolt washer
8. Stock bolt lock washer
9. Stock bolt
10. Stock washer
11. Rear sight

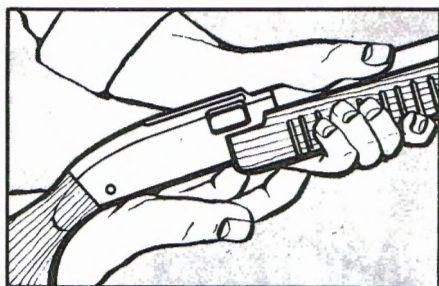
12. Rear sight elevator
13. Magazine support
14. Magazine support pin
15. Magazine tube
16. Receiver shoe
17. Receiver shoe screw
18. Inside magazine tube
19. Magazine cap
20. Magazine cap pin
21. Magazine spring
22. Magazine follower
23. Action bar
24. Action bar stud \*
25. Forearm stud

26. Forearm screw
27. Bolt
28. Extractor, left
29. Extractor retaining pin
30. Extractor retaining roll pin
31. Firing pin retaining pin
32. Extractor, right
33. Firing pin
34. Firing pin spring
35. Extractor spring
36. Buttplate screw (2)
37. Buttplate
38. White plastic buttplate spacer
39. Trigger guard
40. Trigger guard retaining pin spring \*
41. Action bar locking lever
42. Action bar locking lever stud \*
43. Action bar locking lever spring
44. Safety button
45. Safety button plunger
46. Safety button plunger spring
47. Hammer spring pin
48. Hammer spring
49. Hammer spring guide
50. Hammer strut pin
51. Hammer
52. Hammer pin
53. Trigger
54. Trigger pin
55. Trigger spring
56. Sear pin
57. Sear spring
58. Sear
59. Disconnecter
60. Disconnecter hinge pin \*
61. Disconnecter spring
62. Disconnecter spring retaining washer \*
63. Disconnecter spring retaining pin \*
64. Cartridge lifter spring
65. Cartridge lifter spring retaining pin
66. Cartridge lifter
67. Cartridge lifter pin
68. Magazine throat retaining pin
69. Magazine throat, right
70. Magazine throat, left
71. Buttstock
72. Pistol grip cap and screw
73. Fore-end

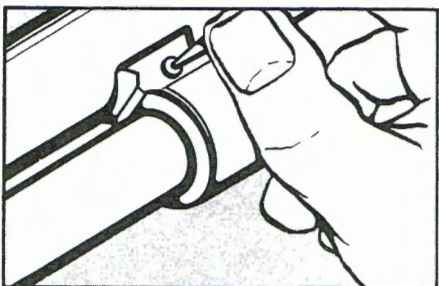
\* Factory assembled to other major part. Do not disassemble.



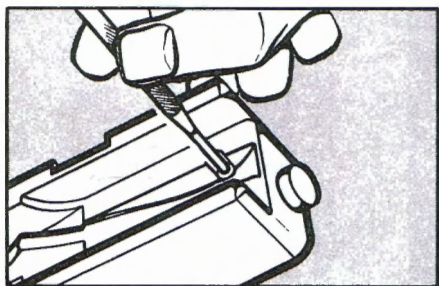




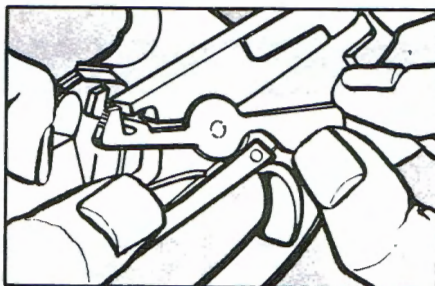
**1** Disassemble Model 33 by turning gun upside-down and, using a pencil, push out trigger guard retaining pin (5) from left to right. Grasp trigger guard (39) and pull up and toward buttstock (71). Entire trigger guard assembly will come out as a unit. While gun is still upside-down, place right hand over bottom of receiver (4) from where trigger guard assembly was removed. Turn gun over. With left hand, pull fore-end (73) slowly rearward and bolt (27) will drop out into right hand



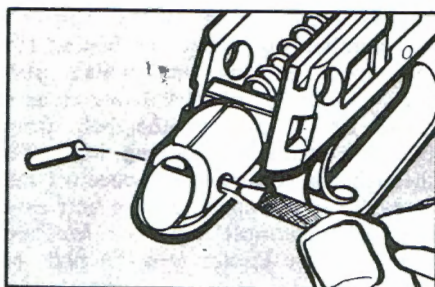
**2** Withdraw inside magazine tube (18). Drift out magazine support pin (14) and slide magazine tube (15) forward out of receiver and magazine support (13). Fore-end (73) with action bar (23) attached will now be free of gun



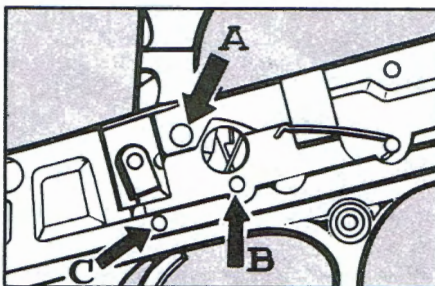
**3** Disassemble bolt by drifting out firing pin retaining pin (31) from underside of bolt as shown. Withdraw firing pin (33) and firing pin spring (34). Drift out extractor retaining roll pin (30) and remove left extractor (28). Drift out extractor retaining pin (29) and remove right extractor (32) and extractor spring (35). Reassemble bolt in reverse



**4** Disassemble trigger mechanism by depressing action bar locking lever spring (43) with thumb and lifting out action bar locking lever (41). Remove disconnecter (59) in similar fashion. Drift out magazine throat retaining pin (68) and cartridge lifter, pin (67). Lift away right and left magazine throats (69 & 70) and cartridge lifter (66). Drift out cartridge lifter spring retaining pin (65) and remove cartridge lifter spring (64)



**5** Continue by drifting out hammer spring pin (47) over cotton waste to prevent loss of hammer spring (48) and hammer spring guide (49). This relieves tension on hammer (51)



**6** Next, drift out hammer pin (52, A) and remove hammer. Drift out sear pin (56, B) and remove sear (58) and sear spring (57). Drift out trigger pin (54, C) and remove trigger (53) and trigger spring (55). Do not remove disconnecter spring retaining pin (63) unless absolutely necessary as disconnecter spring retaining washer (62) is press fitted to pin and may become loose if repeatedly removed. Reassemble trigger guard and gun in reverse

## A MAN TO REMEMBER

HUGH ORR

*Filled one of the earliest musket contracts in America*

*Born—Lochwinnoch, Scotland, Jan. 2, 1715*

*Died—Bridgewater, Mass., Dec. 6, 1798*

**H**UGH ORR was a fine mechanic with a naturally inventive turn of mind. By the time he came to America in 1740 he was already a gunsmith, lockmaker, and an accomplished forger of edged tools. A year after his arrival, he moved to East Bridgewater, Mass., and went to work for a manufacturer of scythes. When his employer retired a few years later, Orr became owner of the shop and carried out experiments in new ways of manufacturing edged tools which brought him considerable fame and fortune.

In addition to his work with tools, Orr also made good use of his early gunsmith's training. In 1748, he made 500 muskets for the Province of Massachusetts, thus completing one of the first large contracts for military arms undertaken in this country. These guns were stored in Castle William in Boston Harbor, and most of them are believed to have been taken away when the British evacuated the city in 1776. With the coming of the Revolution, Orr again produced muskets in quantity for the Committee of Safety, and he also undertook the casting of both iron and brass cannon. In so doing he pioneered in the new method of casting the guns solid and boring them to the proper caliber.

At the close of the Revolution, Orr returned to more peaceful pursuits. He resumed the manufacture of edged tools, and vigorously pursued a more recent interest in spinning and weaving machinery and the fostering of the textile industry in Massachusetts.—HAROLD L. PETERSON





# JAPANESE ARISAKA MODEL 1905 6.5 MM. CARBINE

By Edward J. Hoffschmidt

**F**EW guns have been as maligned as the Japanese Model 1905 (Type 38) cal. 6.5 mm. rifle. During the early stages of World War II, ill-informed observers were calling the gun a piece of junk. The 6.5 mm. cartridge was considered totally inadequate for military use. Few correspondents took the time to find out how good the gun and cartridge really were.

The Arisaka is basically a modified Mauser. It was developed under the supervision of Col. Nariaki Arisaka, Superintendent of Tokyo Arsenal, and officially designated as the Type 38 (1905). Since the rifle is basically a Mauser, it has inherent safety features. The Arisaka is designed to handle

gases from a ruptured case or primer. There are 2 gas escape holes in the top of the receiver and a large combination safety catch and gas shield to divert gases and brass particles away from the shooter's face. The bolt has large, solid, front locking lugs and the bolt handle engages a cut in the receiver and thus acts as a third or safety lug. The bolt has another lug about  $\frac{1}{4}$ " behind the left front locking lug which performs a number of jobs. It serves as a guide rib to prevent the bolt from jamming when the locking lugs pass through the section of the receiver cut away for clip loading. It also acts as a bolt stop. Its most important function is to cam the ejector into the path of

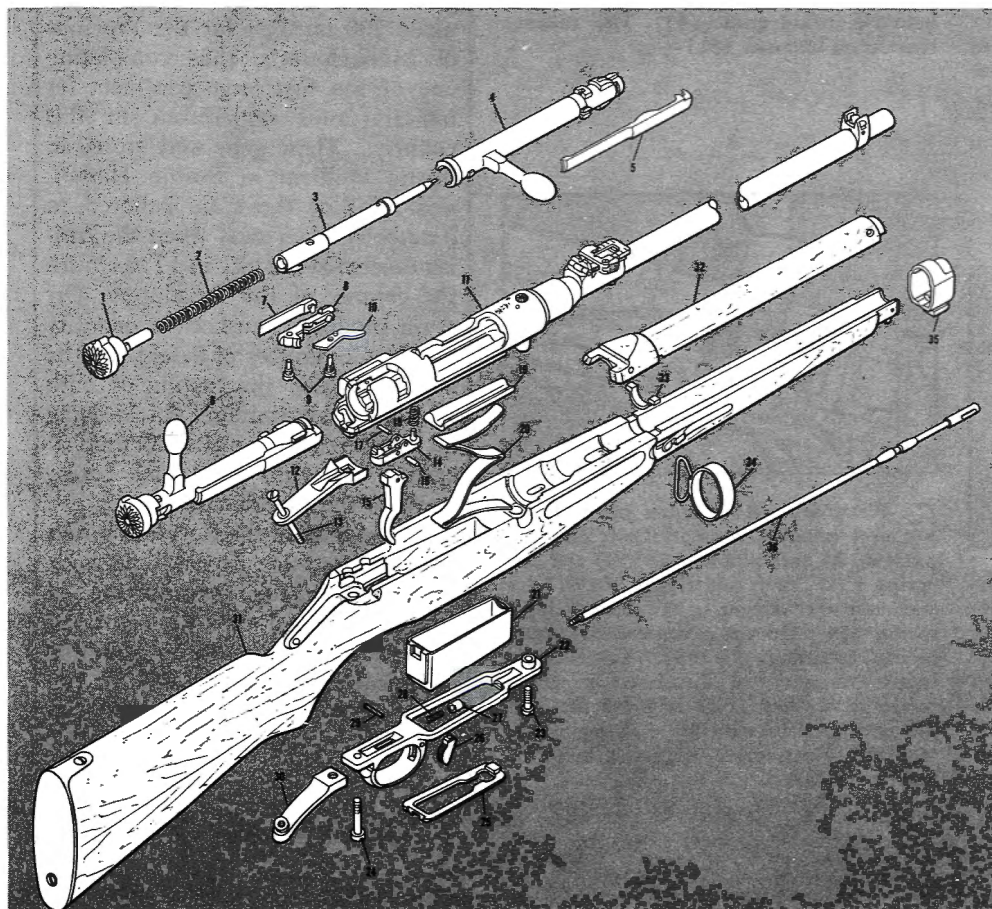
the bolt. Unlike most Mausers, the ejector is not spring-operated, but rather it pivots on a separate screw; when the bolt is opened and pulled back, the bolt lug strikes the rear of the ejector, camming it into the bolt cut in the receiver.

The stock construction is unusual. The butt is made in 2 pieces dovetailed together. This method allows the use of smaller blanks and a stronger grain direction through the pistol grip area. The 2 steel tangs extending back from the action strengthen the pistol grip area even more.

Although the Japanese cal. 6.5 mm. Arisaka rifle is an excellent military arm, it has a number of faults from

## Parts Legend

1. Safety catch
2. Firing pin spring
3. Firing pin
4. Bolt
5. Extractor
6. Completely assembled bolt
7. Bolt stop spring
8. Bolt stop
9. Bolt stop and ejector screws
10. Ejector
11. Carbine receiver and barrel
12. Upper tang
13. Tang screw
14. Sear
15. Trigger
16. Trigger pin
17. Sear pin
18. Sear spring
19. Magazine follower
20. Magazine spring
21. Magazine box
22. Trigger guard
23. Front guard screw
24. Rear guard screw
25. Floorplate
26. Floorplate release
27. Floorplate catch
28. Floorplate catch spring
29. Floorplate release pin
30. Lower tang
31. Carbine stock
32. Upper handguard
33. Barrel seat
34. Lower band
35. Front band
36. Cleaning rod





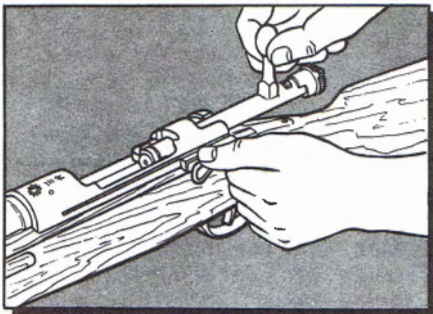
the American point of view. First, the action cocks on closing, which, however, with practice becomes no more trouble than a cock-on-opening action. Some find the safety catch awkward and the trigger pull is generally poor.

The cal. 6.5 mm. Arisaka was made in a variety of sizes and models, ranging from the carbine to the long rifle. Early cal. 6.5 mm. rifles were as finely

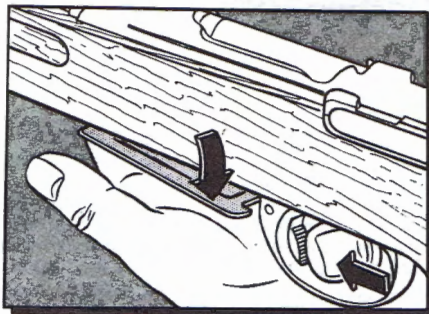
finished as the average sporter.

Shortly before the beginning of World War II, the cal. 6.5 mm. rifle was superseded by the Type 99 (1939) cal. 7.7 mm. rifle.

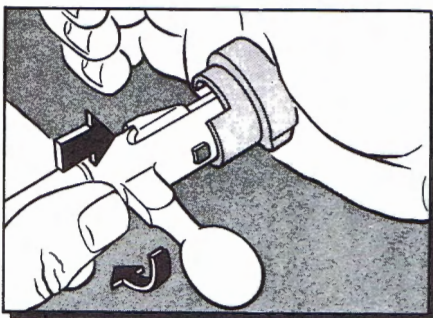
While the Type 99 has basically the same action as the Type 38, the design was simplified and the majority of parts are not interchangeable with those of the Type 38 rifle.



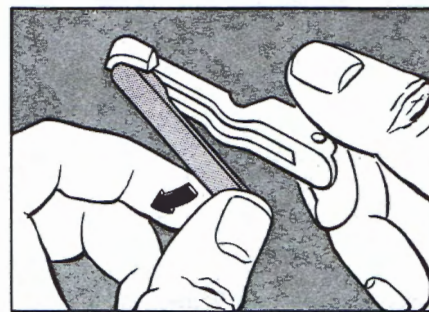
**1** To remove assembled bolt (6), first pull it all the way to rear. Then pull bolt stop (8) out to clear stop lug on bolt. Unlike other Mauser rifles, it is not necessary to engage safety in order to disassemble bolt outside receiver



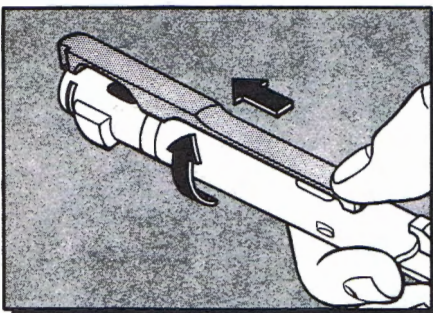
**4** To empty magazine without running cartridges through gun, release floorplate (25) by depressing floorplate release (26) in as far as it will go. Floorplate, magazine spring (20), and follower (19) are now detached from magazine



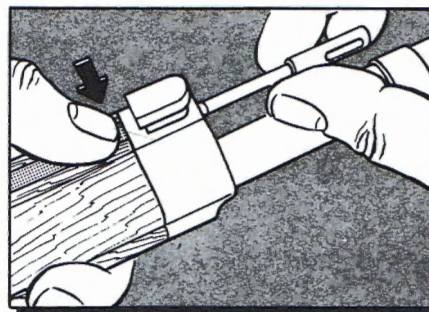
**2** To disassemble bolt, hold it as shown and push safety catch (1) in as far as it can go. Rotate bolt 1/4-turn and ease out safety catch, firing pin (3), and firing pin spring (2). When reassembling, rear notch must be seated in shallower notch in bolt so that firing pin does not protrude. Then push in safety catch



**5** To remove bolt stop screw (9), action must be removed from stock. To remove bolt stop spring (7), rotate it 90° as shown and pull it free of bolt stop (8)



**3** Extractor (5) is attached to bolt in typical Mauser style. To remove it, rotate extractor until small guide rib which rides in groove in front end of bolt is free of groove. Push extractor forward until it snaps free of extractor collar



**6** All Japanese cal. 6.5 mm. rifles are equipped with a full-length cleaning rod for threading to a handle in the soldier's cleaning kit. To remove cleaning rod (36), push in on long spring that retains front band (35). To remove band (35), remove rod and depress spring as far as possible, and then gently drive off front band

## A MAN TO REMEMBER

NICHOLAS N. BOUTET

Made fine firearms for  
Louis XVI and Napoleon

Born—Paris (?), France, 1761

Died—Paris, France, 1833

NICHOLAS NOËL BOUTET was a hereditary gunsmith, related to some of the finest gunsmiths in France. His father, Noël Boutet, had been *arquebusier des cheveaux-legers du Roi*, and his father-in-law, Desaintes, was acknowledged *arquebusier ordinaire du Roi*. Both of these titles passed on to young Nicholas.

Boutet lived during one of the most turbulent periods of French history, but his skill, not only as a gunsmith but also as a goldsmith and artist, kept him at the head of his profession despite the rapidly changing political situations. As a young man Boutet was gunmaker to Louis XVI, but the French Revolution and the execution of the King in 1793 terminated that appointment. The new rulers of France, however, also recognized Boutet's ability and that same year he was authorized to recruit gunsmiths from Liège, requisition necessary equipment, and assume the direction of a gun manufactory at Versailles with a special workshop for "*armes de luxe*". In 1799, Napoleon rose to power as First Consul, and he was so impressed with Boutet's work that in 1800 he granted him an 18-year concession at Versailles with specific instructions to make highly ornate presentation pieces as well as regulation firearms, and to train artists to preserve the great traditions of French gunmaking. Boutet was not destined to reap the full benefits from this appointment, however, for in 1815, after the battle of Waterloo, the victorious Allies sacked his workshop and carried off his models and equipment as well as all completed arms. Following the destruction of his manufactory, Boutet moved to Paris, set up shop at 87 Rue de Richelieu, and revived his old title of *arquebusier ordinaire du Roi et des Princes*, for the French monarchy had once again been restored.—HAROLD L. PETERSON



# JOHNSON Semi-Auto Rifle



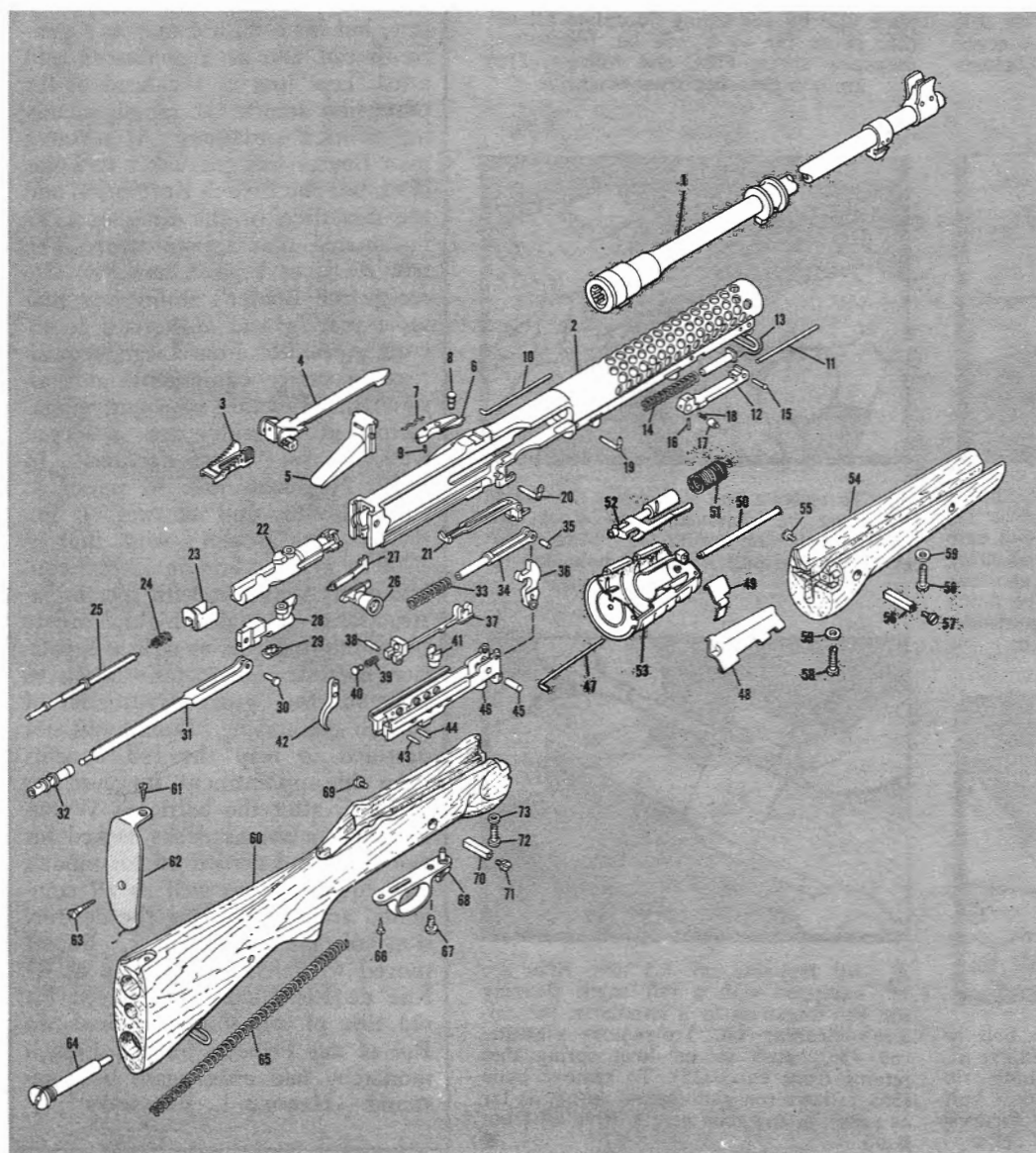
## Parts Legend

By EDWARD J. HOFFSCHMIDT

1. Barrel and collar
2. Receiver
3. Rear sight elevator
4. Rear sight assembly
5. Bolt stop plate and plunger

6. Ejector
7. Ejector pin retainer spring
8. Ejector hinge pin
9. Spring retaining pin
10. Magazine retainer pin
11. Latch spring guide
12. Barrel latch

13. Return spring plunger
14. Barrel return spring
15. Latch hinge pin
16. Detent retainer pin
17. Detent
18. Detent spring
19. Cross pin, front
20. Cross pin, rear
21. Bolt catch
22. Bolt
23. Bolt stop
24. Firing pin spring
25. Firing pin
26. Operating handle
27. Extractor
28. Locking cam unit
29. Firing pin stop
30. Hinge pin
31. Link
32. Mainspring follower
33. Hammer spring
34. Hammer strut
35. Hammer strut pin
36. Hammer
37. Sear
38. Trigger pin link pin
39. Trigger spring
40. Spring plunger
41. Safety catch cam
42. Trigger
43. Trigger pin
44. Sear stop pin
45. Hammer hinge pin
46. Sear housing
47. Magazine cover hinge pin
48. Magazine cover
49. Magazine cover spring
50. Magazine axis
51. Magazine spring
52. Magazine follower
53. Magazine housing
54. Fore-end
55. Recoil stop screw
56. Recoil stop
57. Recoil stop screw
58. Fore-end screw
59. Washer
60. Buttstock
61. Upper buttplate screw
62. Buttplate
63. Buttplate screw
64. Mainspring tube cap and buffer assembly
65. Mainspring
66. Trigger guard wood screw
67. Trigger guard screw
68. Trigger guard and safety assembly
69. Recoil stop screw
70. Recoil stop
71. Recoil stop screw
72. Stock screw
73. Washer





**T**HE Johnson rotary-magazine semi-automatic recoil-operated rifle was invented just prior to World War II by Melvin M. Johnson.

The Netherlands government ordered and obtained 50,000 Johnson rifles chambered for the .30-'06 cartridge. Relatively small quantities of Johnson rifles and light machine guns were also made and issued to the U.S. Marine Corps and Army Special Service Forces. The role of Johnson rifles during World War II was a very minor one by comparison with the M1 rifle which established an unparalleled record.

A few years after the end of World War II, the Netherlands government disposed of a quantity of Johnson rifles and they became available through Win-

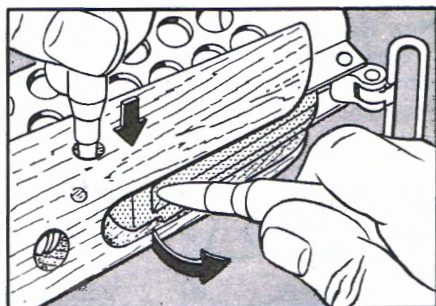
field Arms Corp. of Los Angeles, Calif. In addition to the standard cal. .30-'06 military model, the Winfield firm offered sporterized Johnson rifles which had been restocked along sporting lines. Calibers offered were .270 Winchester, 7 mm. Mauser, and .30-'06.

The strong points of the Johnson semi-automatic rifle were perhaps best summed up by the Army board which tested this rifle in 1940. Their findings:

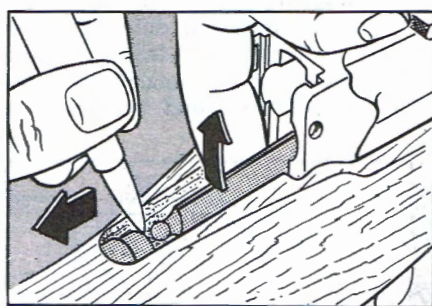
(1) As a machine its performance is satisfactory. (2) It is at least reasonably accurate. (3) It can easily and quickly be disassembled without special tools. (4) The barrel can be removed in a few seconds for cleaning or replacement. (5) With a cartridge in the chamber, additional cartridges can be loaded

into the magazine, thereby making it possible to keep the magazine always full, time between shots permitting. (6) With a cartridge in the chamber, cartridges may be withdrawn from the magazine individually, thereby making convenient the substitution of a few rounds of a different kind of ammunition. (7) It can endure considerable sand and dust without failure to fire and then reload automatically.

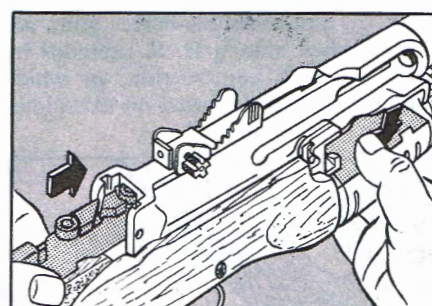
On the critical side the board commented on the 10 lbs. weight of the rifle; liability of the magazine to denting; and single-stage trigger pull. Also, it was not well-suited for use with a bayonet; safety was not foolproof, and magazine might be difficult to load under dusty or sandy field conditions.



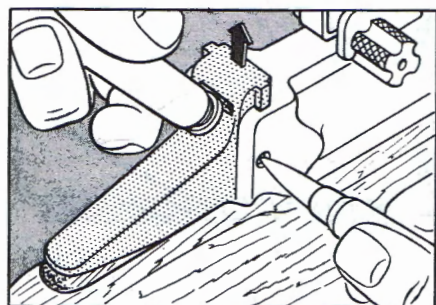
**1** To remove the barrel, disengage the barrel latch detent (17) by inserting bullet end of cartridge in the hole in the fore-end as shown. While the detent is depressed, push the barrel back slightly which permits the barrel latch to drop downward on its hinge. If the latch does not fall, assist it to do so by inserting bullet of another round in the hole in the underside of the latch (12). Then press backward on the operating handle (26) with the right forefinger to unlock the bolt from the barrel, and withdraw barrel from receiver.



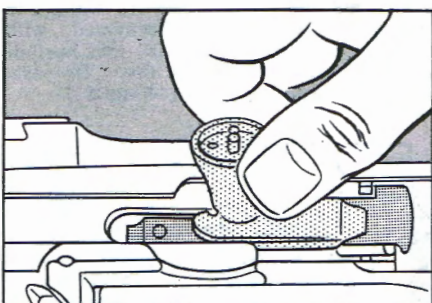
**3** Before the bolt assembly can be removed, the link (31) must be disconnected from the mainspring follower (32). Depress the follower with a cartridge or screwdriver and lift up on the link. Then pull the bolt assembly back about 2".



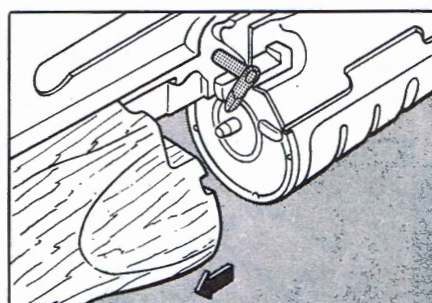
**5** When reassembling the gun, assemble bolt (22) and firing pin assembly before inserting them in the receiver (2). Be sure cams and rollers line up as bolt slides in. To get bolt forward, depress bolt catch (21) by pushing in magazine cover (48).



**2** Remove the bolt stop plate (5) by pushing in on the plunger which extends through right rear side of receiver. Use the rim of another cartridge to lift the bolt stop plate out of its slot in the receiver. Then the bolt stop (23) can be removed from the rear of the receiver.



**4** When the bolt is back 2", grasp the link to hold bolt group in place and at the same time pull up on the operating handle spindle and push operating handle forward until it clears the shoulder in the extractor, then lift out. Lift out the extractor (27). Next, pull rearward on link to remove bolt group from receiver.



**6** The buttstock (60) and trigger assembly are retained by the rear cross pin (20). To remove the cross pin, push in on the spring end and rotate it about 45° to the open section on the receiver and pry it out of the receiver. Sliding buttstock and trigger assembly to rear exposes magazine assembly retaining pins. ■





# L. C. Smith Double-Barrel Shotgun

By THOMAS E. WESSEL

**L.** C. Smith shotguns were manufactured by the Hunter Arms Co., Inc., of Fulton, N. Y., beginning about 1889. They were based on models first made about 1880 by the L. C. Smith Co. of Syracuse, N. Y. In its half century of existence, the Hunter Arms Co. also manufactured Fulton, Hunter, and other shotguns, including many private-brand shotguns, for distribution in addition to their L. C. Smith guns.

L. C. Smith double-barrel guns are distinguished among U. S. shotguns by their side-lock construction, in which the lock parts are carried on side-plates

inletted partly in the action body and partly in the stock. The company early adopted the Baker top-bolt for holding the gun closed. This bolt, later used also by Fox and Ithaca, was a rotating cylinder slotted to engage a heavy extension of the top rib between the barrels, the engaging surfaces being sloped so as to tighten automatically.

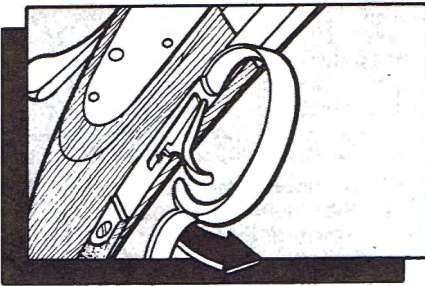
L. C. Smith doubles were produced in a wide range of grades, all of the same basic design but differing in accessory features (single trigger, beaver-tail fore-end, and ventilated rib) and in quality of wood and workmanship,

including finish and engraving.

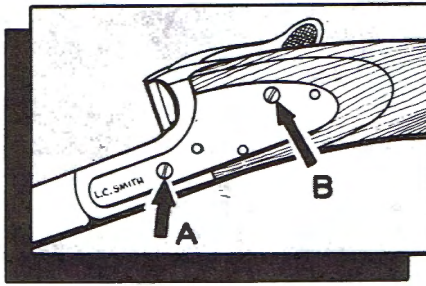
At end of World War II the Hunter Arms Co. was bought by Marlin Firearms Co., and under the operating name of L. C. Smith Gun Co. produced a few grades of L. C. Smith guns until about 1950, when production ended.

Limited repairs and restocking to L. C. Smith guns, but not refinishing, are still available from Marlin Firearms Co., Products Service Division, New Haven, Conn.

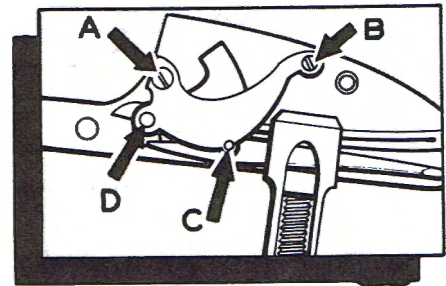
Parts for many obsolete firearms are available from Numrich Arms Corp., West Hurley, N. Y.



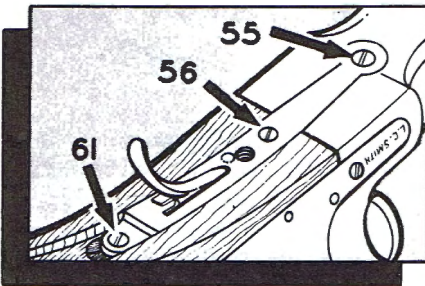
**1** With gun closed, remove fore-end by pulling front end away from barrels. Press top-lever to right, lower buttstock, and lift barrels off action. Leave hammers cocked. Remove trigger guard screw (49) and unscrew trigger guard (48) counter-clockwise



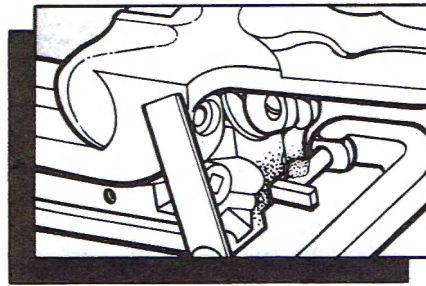
**3** Remove lockplate retaining screws (38) from right and left sides of gun (see A) and lockplate connector screw (39) from right side of gun (see B). Right and left locks may now be removed, with slight tapping of frame (10) with heel of hand if required to loosen them. Be careful not to trip sears (44 and 51)



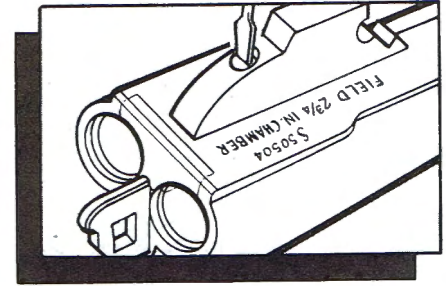
**5** To disassemble either lock assembly, apply mainspring vise (such as Civil War type) between sear and mainspring (42) and take up all slack. Remove bridle screws (46) at A and B. *Do not* drift out sear pin C or trigger pin D. Remove bridle, mainspring, and sear as a unit (with vise), and hammer



**2** With top-lever (9) moved to right, remove trigger plate screw (27). Turn gun over and remove trigger plate retaining screws (55 and 61). Remove top-lever screw (56), and entire trigger mechanism may now be lifted away. Do not perform any further disassembly on this mechanism as it requires rather delicate balancing

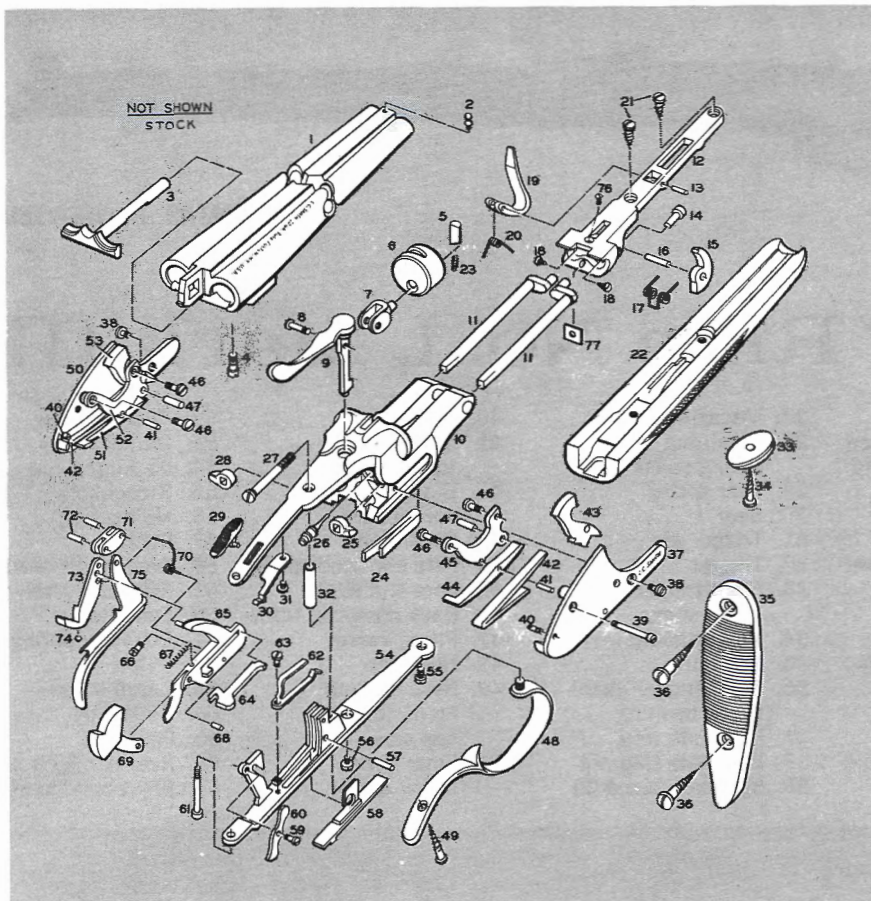


**4** Up-end frame and firing pins (26) will drop out. Place small steel rod against exposed long end of bolt spring (24) and padded steel bar against frame on opposite side. Apply a C clamp and take up tension on bolt spring. With clamp in place, remove coupler screw (8) and coupler (7), and then top-lever (9). Release tension on bolt spring but do not remove it as it is impossible to replace without a special jig. Bolt (6), trip (5), and trip spring (23) may now be removed



**6** Unscrew extractor screw (4) and withdraw extractor. Reassemble gun in reverse order. After top-lever has been connected to its spring, and as trigger plate is being dropped into its recess in frame, a piece of tapered and hardened steel rod must be inserted in top-lever screw hole through clearance hole in trigger plate, and bottom of top-lever forced over until it drops into hole in trigger plate





### Parts Legend

- |                                       |  |
|---------------------------------------|--|
| 1. Barrels                            | 40. Mainspring retaining screw (2)       |
| 2. Front sight                        | 41. Sear pin                             |
| 3. Extractor                          | 42. Mainspring (2)                       |
| 4. Extractor screw                    | 43. Hammer, right                        |
| 5. Trip                               | 44. Sear, right                          |
| 6. Bolt                               | 45. Bridle, right                        |
| 7. Coupler                            | 46. Bridle screw (4)                     |
| 8. Coupler screw                      | 47. Hammer pin (2)                       |
| 9. Top-lever                          | 48. Trigger guard                        |
| 10. Frame                             | 49. Trigger guard screw                  |
| 11. Cocking rod (2)                   | 50. Lockplate, left                      |
| 12. Fore-end iron                     | 51. Sear, left                           |
| 13. Fore-end spring pin               | 52. Bridle, left                         |
| 14. Extractor actuator bar            | 53. Hammer, left                         |
| 15. Extractor actuator                | 54. Trigger plate                        |
| 16. Extractor actuator pin            | 55. Trigger plate retaining screw, front |
| 17. Extractor actuator spring         | 56. Top-lever screw                      |
| 18. Rear fore-end screw (2)           | 57. Trigger pin                          |
| 19. Fore-end spring                   | 58. Selector                             |
| 20. Fore-end spring retracting spring | 59. Safety stud screw                    |
| 21. Fore-end screw (2)                | 60. Safety stud                          |
| 22. Fore-end                          | 61. Trigger plate retaining screw, rear  |
| 23. Trip spring                       | 62. Selector spring                      |
| 24. Bolt spring                       | 63. Selector spring screw                |
| 25. Right lifter                      | 64. Sear plate                           |
| 26. Firing pin (2)                    | 65. Firing plate                         |
| 27. Trigger plate screw               | 66. Spur spring screw                    |
| 28. Left lifter                       | 67. Recoil weight spring                 |
| 29. Safety button and pin             | 68. Recoil weight pin                    |
| 30. Safety spring                     | 69. Recoil weight                        |
| 31. Safety spring screw               | 70. Spur spring                          |
| 32. Trigger plate screw bushing       | 71. Spur link                            |
| 33. Grip cap                          | 72. Spur link pin (2)                    |
| 34. Grip cap screw                    | 73. Spur                                 |
| 35. Buttplate                         | 74. Spur ball                            |
| 36. Buttplate screw (2)               | 75. Trigger                              |
| 37. Lockplate, right                  | 76. Cocking plate screw                  |
| 38. Lockplate retaining screw (2)     | 77. Cocking plate                        |
| 39. Lockplate connector screw         |  |

Note: Left lock shown partially assembled for clarity.

## A MAN TO REMEMBER

**JOHN MAHLON MARLIN**  
Founded the firearms company  
which bears his name

Born—Windsor  
Locks, Conn.,  
May 6, 1836

Died—New Haven,  
Conn.,  
July 1, 1901



John Marlin was born in the heart of a gun-making area, and an interest in firearms seems to have been born in him. His first formal training came at the Colt factory in nearby Hartford where he became a toolmaker and gunsmith, working through the days of rush contracts and heavy production to meet the needs of the Civil War.

While working for Colt, Marlin also spent time in planning for an independent future and in studying means for producing low-priced sturdy cartridge pistols. He was soon ready to start out on his own. He moved to New Haven and set up shop on Grand Ave. A fire forced him to move to the corner of Collis and Water Sts., and then a final move took him to Hamilton and State Sts. where actual production of pistols bearing his name apparently began. In the year 1870 he obtained his first patent on a simple ejector. In 1881 the firm was reorganized and the name was changed from J. M. Marlin to the Marlin Fire Arms Co., under which title it continued to operate for the remainder of Marlin's life.

Throughout John Marlin's life the company produced primarily handguns. Ballard rifles were also manufactured, but the distinguished line of rifles for which it is known today came later. First there were small single-shot pistols of the vest pocket or deringer variety in calibers ranging from .22 to .41. Then revolvers were added, and in the early 1880's Marlin bought out the Standard Revolver Co. to join its line to his own "Little Joker" and "OK" revolvers. At about this time also the large double-action Marlin revolver was developed and manufactured until the production of handguns was discontinued about the turn of the century.

After Marlin's death the control of the firm passed to the Marlin-Rockwell Corp. in 1916. During World War I it manufactured Browning automatic rifles and machine guns at New Haven and Barlow bombs at another plant in Philadelphia. In 1920 it went into receivership, was sold and reorganized in 1926 as the Marlin Firearms Co. once again.—HAROLD L. PETERSON





By THOMAS E. WESSEL

# Lee-Enfield Rifle No. 1, Mark III

## Parts Legend

- |                              |                              |                                       |                                 |                      |
|------------------------------|------------------------------|---------------------------------------|---------------------------------|----------------------|
| 1. Barrel                    | 14. Safety spring            | 27. Magazine catch                    | 40. Buttplate                   | 52. Ejector screw    |
| 2. Foresight blade           | 15. Safety spring screw      | 28. Retaining spring screw            | 41. Buttplate trap spring       | 53. Striker screw    |
| 3. Inner band                | 16. Back trigger guard screw | 29. Sear spring                       | 42. Buttplate trap spring screw | 54. Cocking piece    |
| 4. Inner band screw          | 17. Stock bolt plate         | 30. Sear                              | 43. Outer band                  | 55. Breechbolt       |
| 5. Backsight assembly        | 18. Swivel screw (3)         | 31. Trigger pin                       | 44. Fore-end stud spring        | 56. Mainspring       |
| 6. Backsight protector       | 19. Butt swivel bracket      | 32. Trigger                           | 45. Fore-end stud               | 57. Striker          |
| 7. Backsight protector screw | 20. Swivel bracket screw (2) | 33. Front trigger guard screw         | 46. Back nose cap screw         | 58. Breechbolt head  |
| 8. Fore-end collar           | 21. Sling swivel (2)         | 34. Trigger guard                     | 47. Piling swivel               | 59. Extractor screw  |
| 9. Protector nut             | 22. Stock bolt washer        | 35. Magazine                          | 48. Nose cap                    | 60. Extractor        |
| 10. Action body              | 23. Stock bolt               | 36. Front trigger guard screw bushing | 49. Nose cap nut                | 61. Extractor spring |
| 11. Safety catch             | 24. Stock bolt wad (leather) | 37. Buttplate trap                    | 50. Front nose cap screw        | 62. Cutoff           |
| 12. Locking bolt             | 25. Magazine catch pin       | 38. Buttplate trap pin                | 51. Inner band screw spring     | 63. Cutoff screw     |
| 13. Safety catch washer      | 26. Retaining spring         | 39. Buttplate screw (2)               |                                 | 64. Buttstock        |
|                              |                              |                                       |                                 | 65. Fore-end         |
|                              |                              |                                       |                                 | 66. Rear handguard   |
|                              |                              |                                       |                                 | 67. Front handguard  |

THE cal. .303 British Short Magazine Lee-Enfield Rifle, Mark III was approved for the British Service on Jan. 26, 1907. It was an evolutionary development of the Short Magazine Lee-Enfield Rifle, Mark I, which was adopted on Dec. 23, 1902.

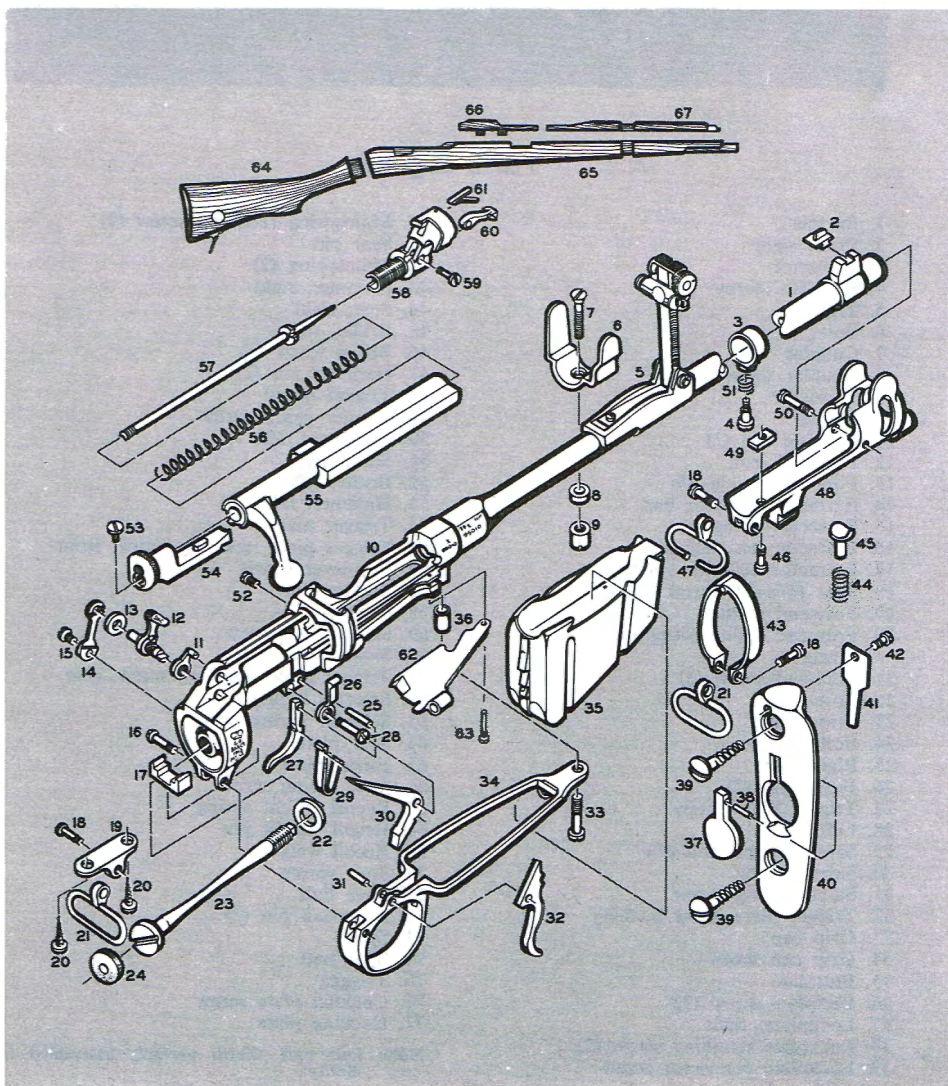
The Mark III version is dimensionally similar to the earlier Mark I but is heavier. It weighs 8 lbs. 10½ ozs. as against 8 lbs. 2½ ozs. for the Mark I. (The weights given do not include the bayonet.)

The Mark III is fitted with a magazine cutoff so that contents of the 10-shot detachable box magazine could be held in reserve while the rifle was used as a single-loader. The receiver or body is fitted with a bridge-type charger guide with slots sloped to the front so that the empty charger is automatically ejected from the charger guide as the bolt is closed.

The U-notch rear sight is fully adjustable for windage and elevation. The front sight is of square-blade Patridge-type. An additional dial sight arrangement is provided for long-range firing. This is a carry-over from the Mark I.

There were many changes made in establishing specifications for the Mark III rifle, and those interested in a detailed history of this and other British Lee-Enfield Service rifles are referred to the book entitled *The Lee-Enfield Rifle* by Maj. E. G. B. Reynolds.

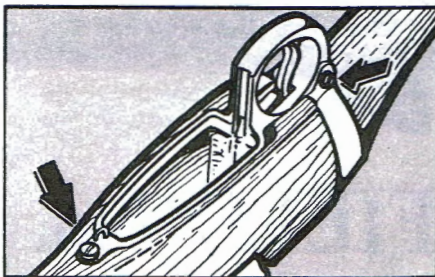
In May 1926, British Service rifles were redesignated by number, and the Short Magazine Lee-Enfield Rifle, Mark III, became the Rifle No. 1, Mark III.



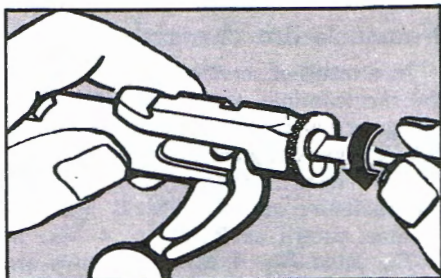




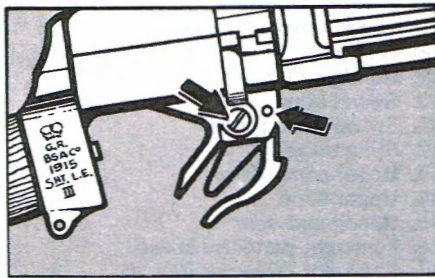
**1** Commence disassembly by first removing magazine (35) and then rotating breechbolt (55) counterclockwise and withdrawing rearward as far as it will go. Disengage breechbolt head (58) from retaining spring (26) by rotating it as shown. It will disengage with an audible click. Withdraw bolt from action body (10)



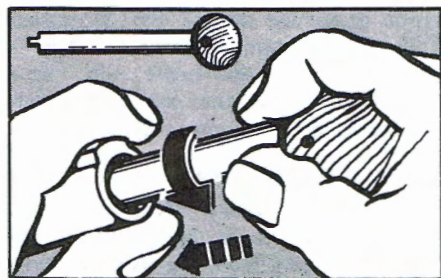
**4** Remove back and front trigger guard screws (16 and 33, right and left arrows respectively). Lift away trigger guard (34). Remove back and front nose cap screws (46 and 50 respectively) and pull nose cap (48) forward off rifle. Remove inner band screw (4), and swivel screw (18) from outer band (43). Open and lift away outer band. Front handguard (67), fore-end (65), and rear handguard (66) may now be removed in that order



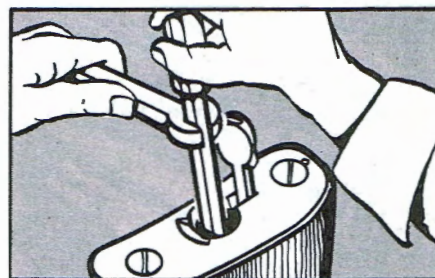
**2** Disassemble breechbolt by removing striker screw (53), and then unscrewing breechbolt head from the other end of the breechbolt



**5** Remove retaining spring screw (28, left arrow) and lift away retaining spring (26), sear (30), and sear spring (29). Drift out magazine catch pin (25, right arrow), remove magazine catch (27)



**3** To remove striker (57); it is necessary to have an Enfield bolt stripping wrench or improvise one as shown using a  $\frac{3}{8}$ " O.D. brass tube approximately 6" long. File 2 opposing keys or notches in one end of tube and affix wooden ball on other end to serve as handle. Drill through handle and tube with  $\frac{1}{8}$ " drill and insert pin to prevent slippage. Insert tool into front end of breechbolt until notches engage corresponding notches in striker collar. Unscrew striker from cocking piece (54) maintaining steady inward pressure to prevent mainspring (56) from expelling striker when it becomes fully unscrewed from cocking piece



**6** Should removal of buttstock (64) become necessary, open buttplate trap (37) and with a piece of bent wire fish out leather stock bolt wad (24). Insert long, square shanked screwdriver and engage slot in stock bolt (23). While applying downward pressure, place an appropriately sized open-end wrench against screwdriver shank and turn out stock bolt. A small quantity of penetrating oil may aid this operation as the bolts are often rusted in. Reassemble rifle in reverse ■

## A MAN TO REMEMBER

### SIMEON NORTH



*Made the first  
United States  
martial pistols*

**Born—Berlin, Conn., 1765**

**Died—Middletown, Conn., 1852**

UNLIKE most of America's other famous gunsmiths, who seem to have started out from the beginning to follow their trade, Simeon North was primarily interested in agriculture. His first 30 years were devoted to farming, and when he did purchase land suitable for a power mill on Spruce Creek adjoining his farm, it was with the express intent of manufacturing scythes.

North had a gunsmith neighbor named Elias Beckley, however, and it is probable that he learned something of the manufacture of guns from him. At any rate, when the government evinced an interest in obtaining pistols for the Army in 1799, North sought and obtained the first contract. These guns he manufactured with the aid of his brother-in-law, Elisha Cheney, a clockmaker, who supplied the screws and pins for the pistols.

From that time on, Simeon North was in the gunmaking business. The War Department was so pleased with his guns that contracts followed closely after each other. With the War of 1812 the orders grew so large that he moved to Middletown and built a large new factory there. In the meantime (1811) he had been elected Lieutenant Colonel of the Sixth Connecticut Regiment. This position so pleased him that he delighted to be called Col. North for the rest of his life.

North's early work had all been with pistols, including very fine presentation pieces, but in 1823 he undertook the manufacture of rifles. Eventually he devoted his entire effort to long arms, particularly Hall breech-loading rifles and carbines, on which he invented and patented an improved lever for opening the breech. In all, Simeon North manufactured at least 50,000 martial pistols and about the same number of long arms for the United States Government.—HAROLD L. PETERSON.



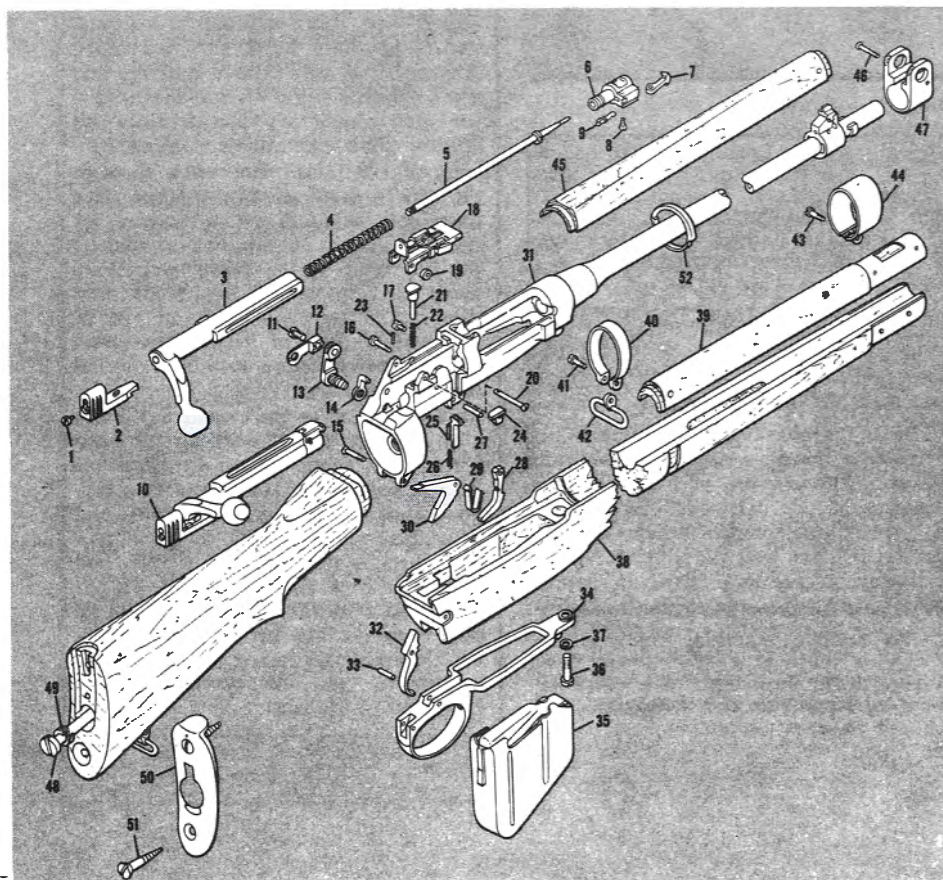


# LEE-ENFIELD No. 4 RIFLE

By EDWARD J. HOFFSCHMIDT

## Parts Legend

- |                          |                                  |
|--------------------------|----------------------------------|
| 1. Striker screw         | 27. Sear hinge pin               |
| 2. Cocking piece         | 28. Magazine catch               |
| 3. Breechbolt (stripped) | 29. Sear spring                  |
| 4. Mainspring            | 30. Sear                         |
| 5. Striker               | 31. Body, No. 4 Mk. I (receiver) |
| 6. Breechbolt head       | 32. Trigger                      |
| 7. Extractor             | 33. Trigger pin                  |
| 8. Extractor screw       | 34. Trigger guard                |
| 9. Extractor spring      | 35. Magazine                     |
| 10. Bolt (assembled)     | 36. Front guard screw            |
| 11. Locking bolt screw   | 37. Guard screw lock washer      |
| 12. Locking bolt spring  | 38. Fore-end                     |
| 13. Locking bolt         | 39. Handguard, front             |
| 14. Safety catch         | 40. Swivel band                  |
| 15. Rear guard screw     | 41. Swivel band screw            |
| 16. Magazine catch screw | 42. Sling swivel                 |
| 17. Ejector screw        | 43. Upper band screw             |
| 18. Mk. III rear sight   | 44. Upper band                   |
| 19. Spacer               | 45. Handguard, rear              |
| 20. Rear sight hinge pin | 46. Foresight protector screw    |
| 21. Sight detent plunger | 47. Foresight protector (Mk. II) |
| 22. Detent spring        | 48. Stock bolt                   |
| 23. Hinge pin lock pin   | 49. Stock bolt lock washer       |
| 24. Bolt release stop    | 50. Buttplate                    |
| 25. Bolt release         | 51. Buttplate screw (2)          |
| 26. Bolt release spring  | 52. Lower band                   |



**F**EW weapons in history can match the long and illustrious story of the British bolt-action Lee-Enfield rifles.

The original Lee-Enfield rifle, adopted in 1888, was based on the design of an American gun designer named James Paris Lee. The Lee-Enfield went through a bewildering maze of marks and models until it emerged in World War I as the SMLE Mk. III\*.

## Nomenclature changed

As a result of service in World War I the shortcomings of the Mk. III\* were recognized and, in the 1920's, the SMLE Mk. VI was designed to replace it. The British changed their system of rifle nomenclature and the SMLE Mk. VI became known as Rifle No. 4 Mk. I.

The Rifle No. 4 Mk. I features an aperture rear sight, a heavier barrel, a simplified stock, and an improved bolt-retaining system. As World War II progressed, the Rifle No. 4 Mk. I was further simplified by eliminating the separate bolt release. The simplified gun is known as the Rifle No. 4 Mk. I\*.

Since England's small arms production was greatly strained by wartime demands, the Stevens Arms Co., division of Savage Arms Corp., Chicopee Falls, Mass., manufactured the No. 4 rifle under the Lend Lease Act. These rifles are the ones that are found with the marking "U. S. property".

## Variety of finishes

Like other military rifles, the No. 4 rifle will be found in a variety of finishes, ranging from the usually finely made Canadian Long Branch Arsenal guns to the cruder Lee-Enfields turned out in England right after Dunkirk. A modified No. 4 rifle, shortened and lightened for jungle fighting, was designated Rifle No. 5 Mk. I. It has exactly the same mechanism as the No. 4 but is far handier. The Rifle No. 4 Mk. I (T), designed for sniping, was fitted with a cheekpiece and the No. 32 telescope sight.

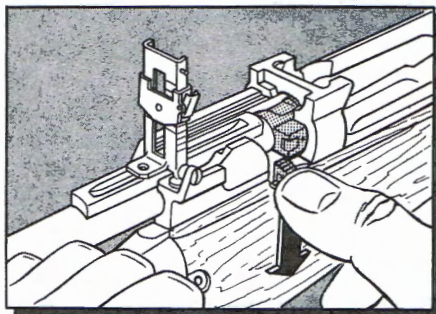
In an effort to improve the trigger



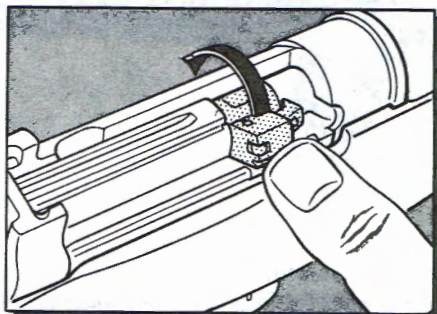
arrangement, the Rifles No. 4 Mk. I/2 and Mk. I/3 had the trigger pivoted to the body (receiver) instead of to the trigger guard.

From a military point of view the Lee design was superior to many of its bolt-action contemporaries. It has a 10-shot magazine and a 20% shorter bolt stroke than the Mauser or Mannlicher, plus about 20% less bolt rotation. These features, combined with a smoothly working bolt, make the Lee-Enfield excellent for rapid-fire. From

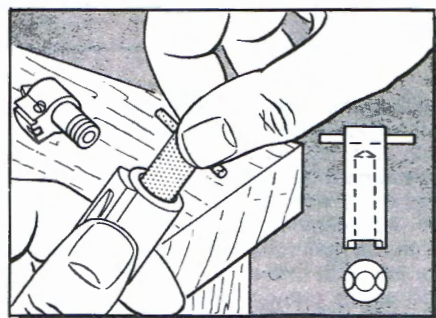
another point of view, the Lee-Enfield has a few drawbacks. First, the rear locking arrangement is not quite so favorable for accuracy as the front locking type. Second, the 2-piece stock adversely affects accuracy. Last but not least the .303 British cartridge is rimmed, making feeding critical although it simplifies the headspace problem. These shortcomings, whether real or imaginary, cannot detract from the Lee-Enfield's enviable reputation for reliability and rapidity of fire.



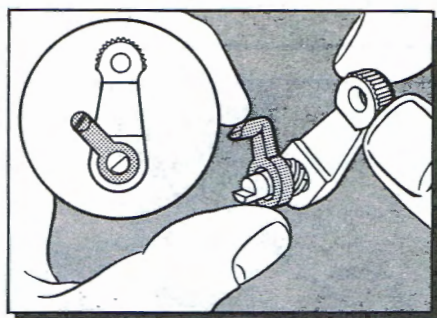
1 There are 2 types of bolt release in No. 4 rifles. To operate the type in the No. 4 Mk. I rifle, the rear sight (18) is lifted first and then the bolt release (25) is depressed. Pull the bolt all the way back and release the bolt release. Rotate breechbolt head (6) up in line with rib on bolt and pull it free of gun



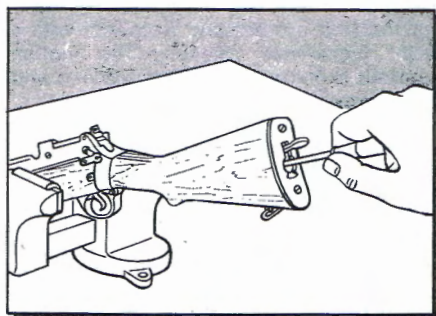
2 The bolt release in the No. 4 Mk. I\* rifle is far simpler and eliminates 3 parts. Simply open the bolt and ease it back until breechbolt head rides out of its guide groove into the milled-away portion  $\frac{1}{2}$ " back from the end of the receiver ring. Rotate the breechbolt head upward and pull the bolt free of the gun. Flip up the rear sight if necessary



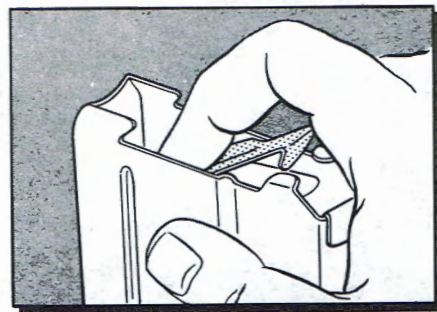
3 To remove striker (5), unscrew breechbolt head and striker screw (1) in cocking piece (2). Unscrew striker with a simple tool made for the purpose as shown (do not attempt to remove striker with pliers). This tool engages in the notches on striker shoulder. Striker can only be removed from front of bolt



4 The locking bolt (13) has a multiple thread to move the safety catch (14) in and out of engagement. To operate properly, the pieces must line up when tightened together as shown in insert. To align the pieces, be sure flat on safety catch is roughly parallel to flat on locking bolt pin before engaging threads



5 To remove buttstock, clamp rifle in padded vise, open trap in buttplate (50), remove felt wad, and unscrew stock bolt (48) with long screwdriver



6 To remove magazine follower and spring, push rear of follower down far enough for the front end to clear tab-like projections on the magazine, then ease out follower and spring

## A MAN TO REMEMBER

### HENRY NOCK

*He invented a screwless enclosed flintlock*

*Born—1741  
Died—London, Nov. 1804*

**H**ENRY NOCK was a maker of high-quality personal guns who nevertheless devoted much time to the improvement of standard military arms. His first definitely recorded shop was in St. Andrew's Parish, London, in 1771, and there he patented his first enclosed lock which substituted pins and hooks for the usual screws.

The outbreak of the American Revolution brought Nock into close contact with the Board of Ordnance, and launched him on the program for improving military arms which marked the rest of his life. At first he contracted only for standard weapons and parts. Then, in 1779 and 1780, he manufactured the famous 7-barrel volley guns used by the British Navy. The end of hostilities in 1781 brought an end to the heavy demand for firearms, and business declined until the Duke of Richmond became Master General of the Ordnance in 1782. Richmond was vastly interested in obtaining lighter and more efficient arms, and during his time Nock obtained many contracts for new lighter muskets and some carbines using his enclosed screwless lock which was both stronger and simpler than the standard model.

Nock continued this work through the 1790's while extensive trials were made, but the military authorities did not take kindly to the innovations. As the beginning of the Napoleonic Wars made it necessary to obtain standard weapons in great quantities as rapidly as possible, one of Nock's last contracts, shortly before his death, called for the conversion of a number of his improved guns to the standard pattern.

In addition to his work on the musket, Nock continued to produce his fine personal and sporting arms, supplied guns to various militia units, and developed among other things a new carbine, a new pistol, and a rifle, and made patterns for new land service pikes and a movable forge. In 1802 he was made the Master of the Gunmakers' Company, an honor which crowned a lifetime of fine workmanship.—

HAROLD L. PETERSON



## **Exploded views:**

# THE M1A RIFLE

BY ARTHUR PENCE



THE M1A rifle, manufactured by the non-governmental Springfield Armory, Inc., of Geneseo, Ill., was accepted for use in the service rifle class of competition by both the DCM and the NRA as of Jan. 1, 1974. Designed with no capability of full automatic fire, it is not subject to the restrictions imposed on civilian ownership of M14s.

The M1A is available in three grades: Standard, National Match and Super Match. The Standard M1A is not glass bedded and has the regular-issue sights with one minute of angle adjustments. The National Match version is glass bedded in a new walnut stock and is marked NM on the barrel 4" to the rear

of the front sight, which is the narrow blade type. The rear sight is the hooded aperture  $\frac{1}{2}$  m.o.a. adjustable version and is marked NM. The trigger is tuned to  $4\frac{1}{2}$  lbs., and the gas system is unitized, rendering the spindle valve immovable. The operating rod spring guide is round and concentric and the flash suppressor is reamed oversize. The Super Match is the same as the National Match except that it has a barrel  $1\frac{1}{4}$  lbs. heavier than standard.

The factory suggests that disassembly be done only if absolutely necessary. Frequent disassembly contributes to wear of the parts and leads to early unserviceability and inaccuracy. ■

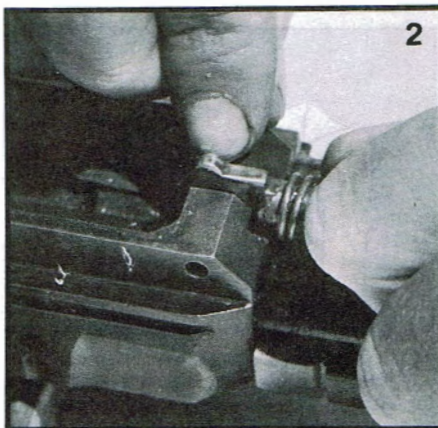


### **Disassembly Procedures**

Press the magazine catch (56) and remove the magazine (60). Draw the bolt to the rear and inspect the chamber to make sure that it is empty and allow the bolt to go forward.

1. Engage the safety (53) and place the rifle, sights down, on a bench with a block under the cartridge clip guide (13) to keep the sights off the bench. Using a cleaning rod section or other tool in the trigger guard hole for leverage, pry the guard (54) back and up. Pivoting the trigger guard forward frees the trigger assembly (45 - 56). Pull straight out to remove it.

To remove the stock (44) hold the receiver down and a few firm slaps with the



palm of the hand on the comb of the stock will separate it from the barreled action.

2. With the muzzle to the left, grasp the operating rod spring (36) with the left hand and pull toward the muzzle, easing tension on the operating rod spring guide (35). With the right fore-finger, pull the connector lock (18) toward you. If the operating rod spring guide is allowed to slip at this point it will be projected with enough force to cause injury. Carefully lift the operating rod spring guide and spring and withdraw them to the rear.

Pull the operating rod (37) to the rear until its guide lug is in the disassembly notch in the receiver, then pull the operating rod handle outward and to the rear and remove.

3. Grasp the roller guide on the bolt (3) and move it forward, simultaneously turning the bolt upward and outwards with a slight clock-wise rotation. The motion required is tricky but quickly learned and done properly requires no force.

With the combination tool or a  $\frac{3}{8}$ " wrench remove the gas cylinder plug (29). Tilt the rifle muzzle down and allow the gas piston (27) to slide out into your hand. Unscrew the gas cylinder lock (28) and slide it, the gas cylinder (23) and the front band (22) forward, exposing the gas port. Slide the handguard (59) toward the muzzle until it is free of the grooves in the barrel.

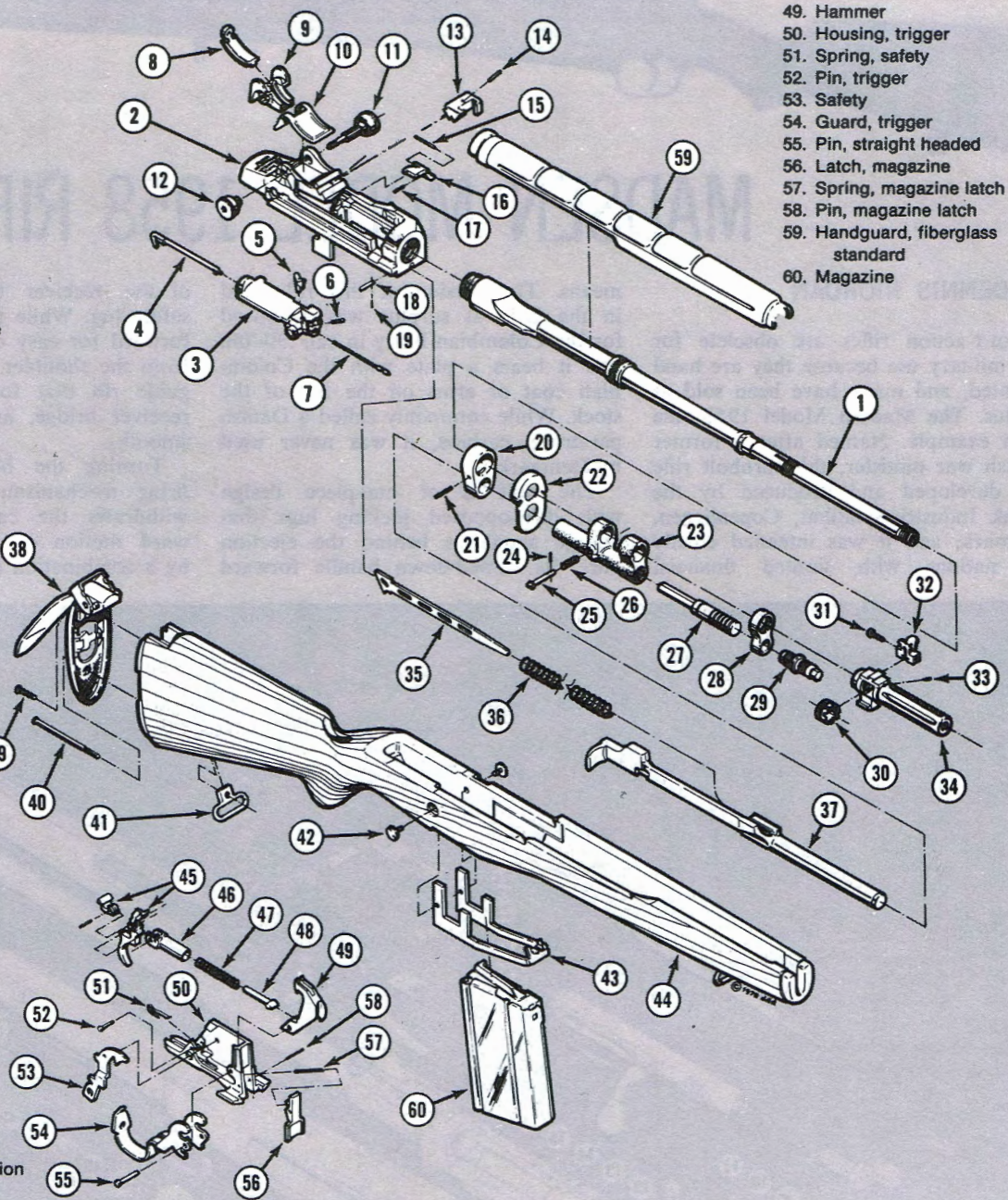
The M1A is now fully field stripped for all normal maintenance requirements.

4. The bolt (3) is best stripped by using



## Parts Legend

1. Barrel
2. Receiver
3. Bolt, breech
4. Pin, firing
5. Extractor
6. Plunger, extractor, w/spring
7. Ejector, w/spring
8. Aperture, rear sight
9. Base, rear sight
10. Cover, rear sight
11. Pinion assembly, elevating
12. Knob assembly, windage
13. Guide, cartridge clip
14. Pin, cartridge clip guide
15. Pin, bolt lock
16. Lock, bolt
17. Spring, bolt lock
18. Lock, connector
19. Pin, connector lock
20. Guide, operating rod
21. Pin, operating rod guide
22. Band, front
23. Cylinder, gas
24. Pin, spindle valve
25. Spindle, valve
26. Spring, valve
27. Piston, gas cylinder
28. Lock, gas cylinder
29. Plug, gas cylinder
30. Nut, flash suppressor
31. Screw, cap socket head, front sight
32. Sight, front
33. Setscrew
34. Suppressor, flash
35. Guide, operating rod spring
36. Spring, operating rod
37. Rod, operating
38. Plate assembly, butt, hinged
39. Screw, wood
40. Screw, machine
41. Swivel, butt stock
42. Screws, stock liner
43. Liner, stock
44. Stock
45. Trigger & Sear assembly
46. Housing, hammer spring
47. Spring, helical compression
48. Plunger, hammer spring
49. Hammer
50. Housing, trigger
51. Spring, safety
52. Pin, trigger
53. Safety
54. Guard, trigger
55. Pin, straight headed
56. Latch, magazine
57. Spring, magazine latch
58. Pin, magazine latch
59. Handguard, fiberglass standard
60. Magazine

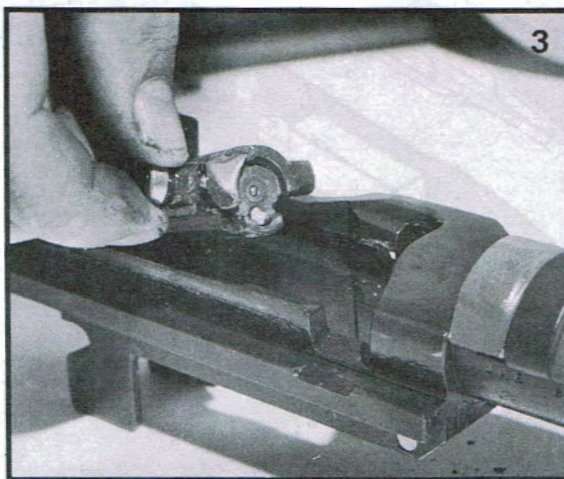


the combination tool. Insert the combination tool into the face of the bolt with the blade between the inner edge of the extractor (5) and the lug on the bolt face, turn the combination tool clockwise, prying the extractor up and out, taking care to retain the extractor plunger and spring (6). Remove the extractor plunger with spring and the ejector with spring (7). The firing pin can now be withdrawn to the rear.

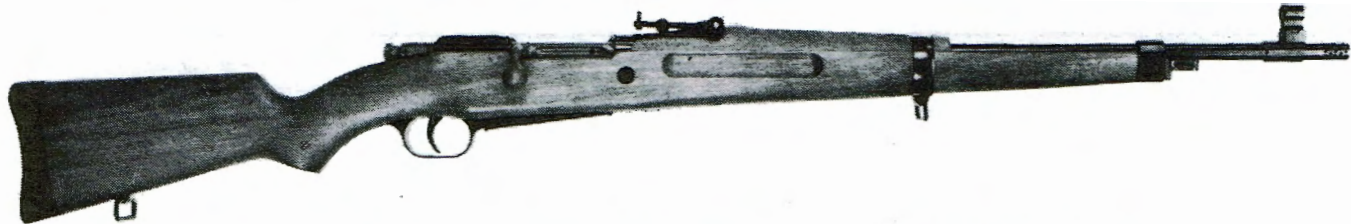
Reassembly is done in reverse order except as noted below:

**Bolt:** insert firing pin, ejector and spring, extractor plunger and spring. With the combination tool against a solid surface, press the ejector into place and at the same time press the extractor down into its place.

**Gas Piston:** must be positioned with the flat on the tang toward the barrel to slide into place.







# MADSEN MODEL 1958 RIFLE

By DENNIS RIORDAN

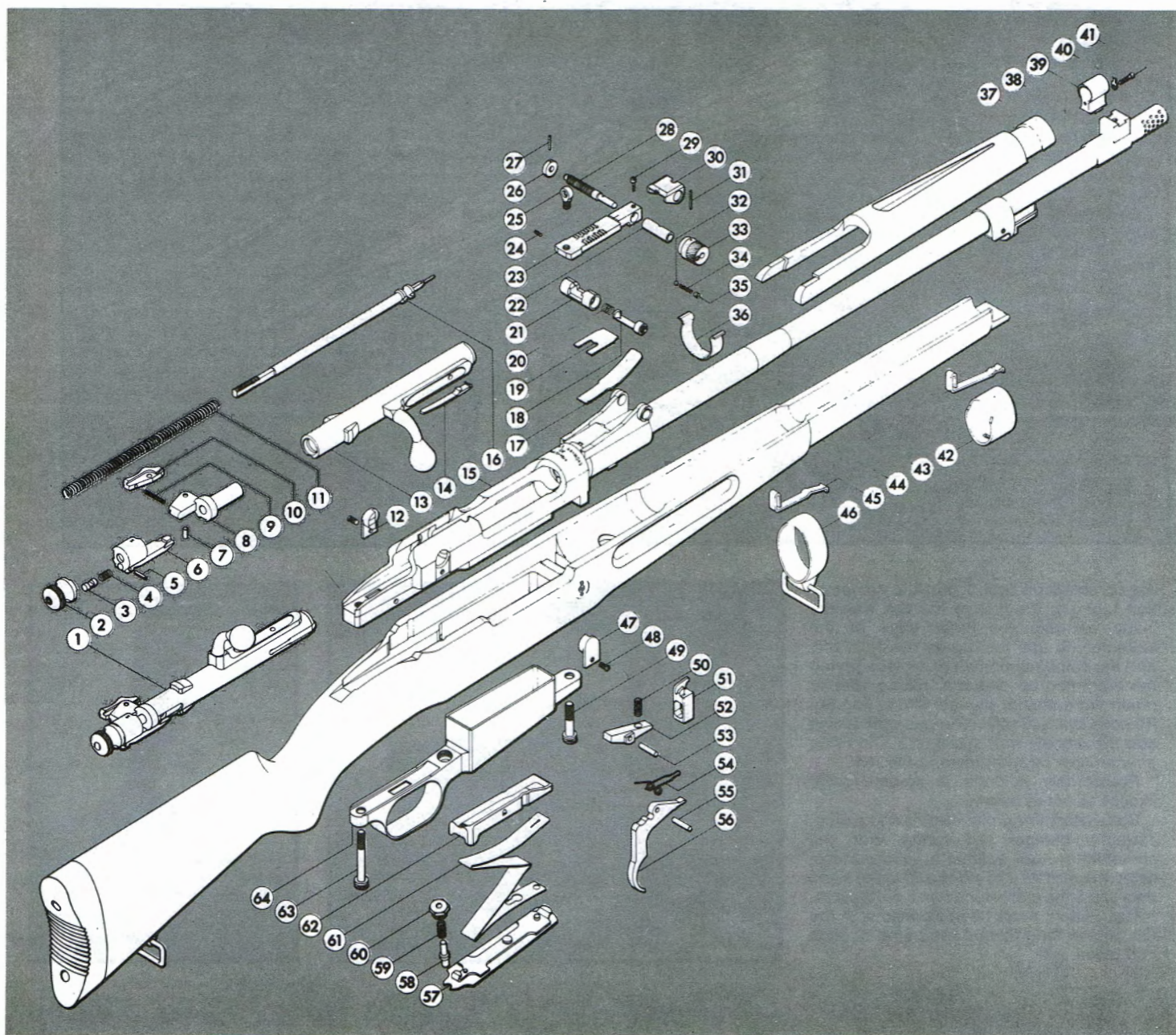
**B**OLT-action rifles are obsolete for military use because they are hand operated, and many have been sold as surplus. The Madsen Model 1958 rifle is an example. Named after a former Danish war minister, this turnbolt rifle was developed and produced by the Dansk Industri Syndikat, Copenhagen, Denmark, and it was intended chiefly for nations with limited financial

means. The version of this rifle sold in the U.S. as surplus was produced for the Colombian Navy in cal. .30-'06, and it bears a plate with the Colombian coat of arms on the left of the stock. While commonly called a Danish paratroop carbine, it was never used by Denmark.

The bolt is of one-piece design with dual-opposed locking lugs that engage shoulders behind the ejection port. Its turned-down handle forward

of the receiver bridge serves as a safety lug. While the handle is too far forward for easy operation of the rifle from the shoulder, the bolt has a long guide rib that follows a slot in the receiver bridge, and bolt operation is smooth.

Turning the bolt open cocks the firing mechanism, and the extractor withdraws the cartridge case. Rearward motion of the bolt is stopped by a combination bolt stop and ejector,





an arrangement similar to that of the Italian Carcano rifle. Also similar to the Carcano is the one-piece firing pin with detachable cocking piece and firing pin nut. There is no bolt sleeve.

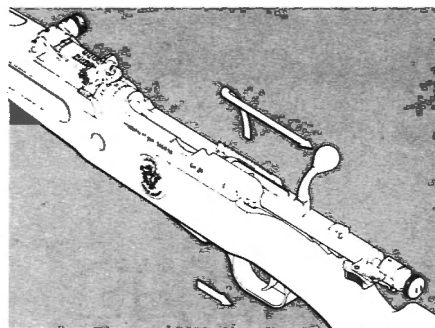
The safety on the left rear of the bolt is engaged on safe when turned upward. This locks both the firing mechanism and bolt. A spring-loaded catch on the safety must be depressed before the safety can be engaged.

Of staggered-column type, the 5-round fixed box magazine can be loaded singly or by using a U.S. M1903 Springfield clip. Only cartridges with pointed bullets feed properly.

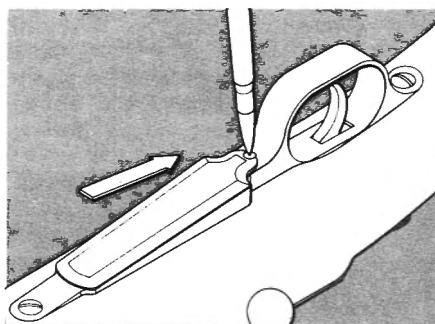
Mounted on the rear of the 23½" barrel is a tangent type aperture rear sight. It has a large windage knob with micrometer click adjustments, and elevation is adjustable in 100-meter increments by moving the elevation slide along the leaf. Although mechanically satisfactory, this sight is too far forward for an aperture sight. The well-designed front sight has a square-top blade protected by a metal hood.

One of the special features of this rifle is a small muzzle brake with a number of round gas ports. Another special feature is a thick rubber recoil pad fitted to the one-piece walnut stock. At the front of the fore-end is a combination nosecap and bayonet lug. Above it is a half-length wood handguard.

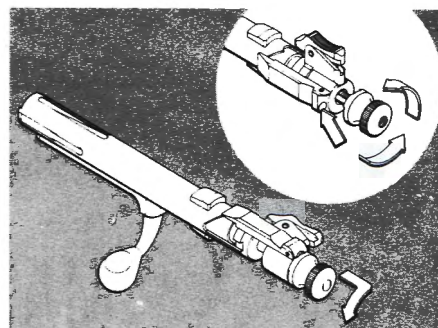
The Madsen rifle is well made, reliable, and fairly accurate. Since it is not as common as many other military rifles, it is highly desirable for a collection.



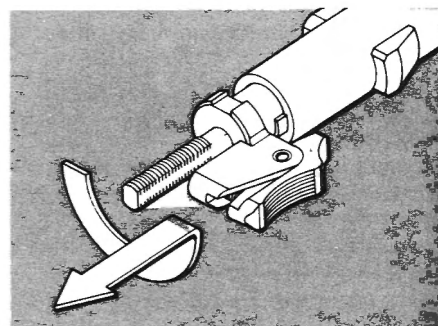
**1** To field-strip the Madsen rifle, lift bolt handle, pull bolt (13) fully to the rear, and remove any cartridges. Depress trigger (56) and slide bolt assembly from receiver.



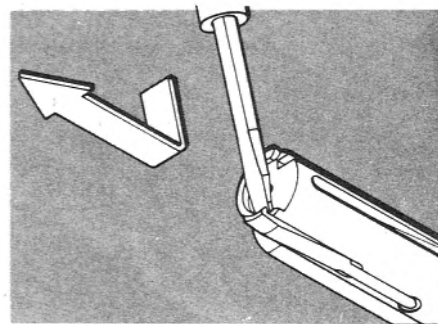
**2** Strip the magazine by depressing floorplate catch (58) with tip of jacketed bullet or a punch, at the same time pushing rearward on magazine floorplate (57). Lift out floorplate, magazine spring (61), and follower (62). Further disassembly is not required for normal cleaning.



**3** To strip bolt assembly, pull rearward on firing pin nut (2), and rotate firing mechanism ¼ turn to the left. This lowers the firing pin (16) and relieves most of the tension on firing pin spring (11). Depress firing pin nut retainer (3), and unscrew firing pin nut. Remove cocking piece (6) to rear.



**4** Grasp safety (8) firmly and rotate ½ turn to align it with bolt rib. Use caution, as safety is under spring tension. Ease safety out to the rear, and remove firing pin (16) and firing pin spring.



**5** To remove extractor (14), place a small screwdriver beneath extractor claw and spring the extractor outward until its lug is free of retaining hole in bolt. Then pry extractor forward out of bolt. Reassemble in reverse. In doing so, screw on firing pin nut as far as it will go, and then back off slightly to engage one of its notches with firing pin nut retainer.

#### PARTS LEGEND

- |                            |                             |                                    |
|----------------------------|-----------------------------|------------------------------------|
| 1. Assembled bolt          | 23. Sight leaf              | 45. Lower band spring              |
| 2. Firing pin nut          | 24. Aperture set screw      | 46. Lower band                     |
| 3. Nut retainer            | 25. Aperture                | 47. Right locking seat             |
| 4. Nut retainer spring     | 26. Windage screw flange    | 48. Locking seat screw (2)         |
| 5. Nut retainer pin        | 27. Flange pin              | 49. Front guard screw              |
| 6. Cocking piece           | 28. Windage screw           | 50. Sear spring                    |
| 7. Safety catch pin        | 29. Leaf bushing lock screw | 51. Ejector/bolt stop              |
| 8. Safety                  | 30. Windage scale           | 52. Sear                           |
| 9. Safety catch spring     | 31. Windage knob pin        | 53. Sear pin                       |
| 10. Safety catch           | 32. Windage index ball      | 54. Ejector spring                 |
| 11. Firing pin spring      | 33. Windage knob            | 55. Trigger pin                    |
| 12. Left locking seat      | 34. Index spring            | 56. Trigger                        |
| 13. Bolt                   | 35. Index spring plug       | 57. Magazine floorplate            |
| 14. Extractor              | 36. Handguard clamp         | 58. Floorplate catch               |
| 15. Receiver               | 37. Handguard               | 59. Floorplate catch spring        |
| 16. Firing pin             | 38. Barrel                  | 60. Floorplate catch guide bushing |
| 17. Rear sight leaf spring | 39. Front sight hood        | 61. Magazine spring                |
| 18. Sight slide catch      | 40. Sight post              | 62. Magazine follower              |
| 19. Leaf spring keeper     | 41. Sight post lock screw   | 63. Rear guard screw               |
| 20. Sight slide spring     | 42. Upper band              | 64. Trigger guard                  |
| 21. Sight slide            | 43. Upper band spring       |                                    |
| 22. Sight leaf bushing     | 44. Stock                   |                                    |





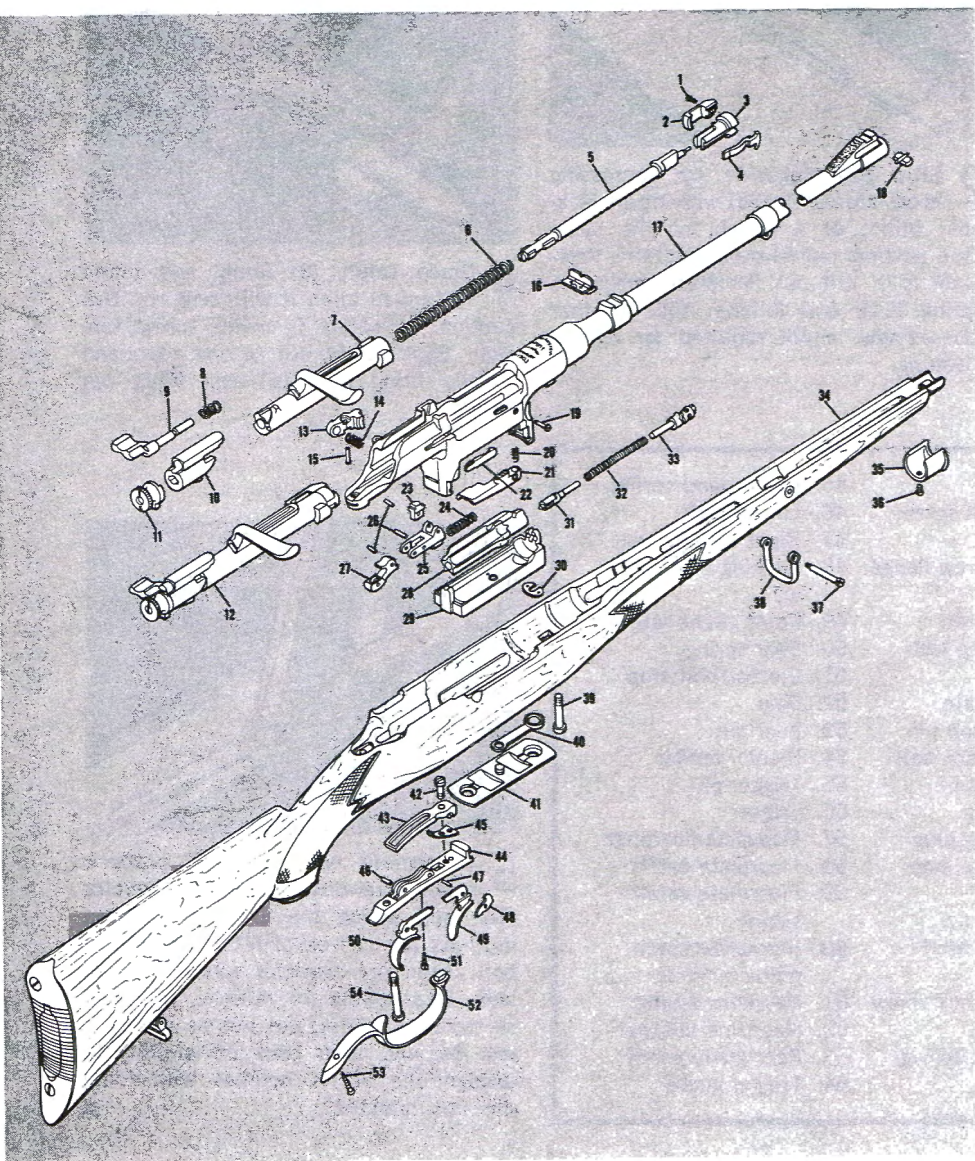
# MANNLICHER-SCHOENAUER RIFLE

By EDWARD J. HOFFSCHMIDT

IN 1900 the Austrian Arms Factory of Steyr, Austria, introduced a Mannlicher bolt-action rifle with spool-type rotary magazine perfected by Otto Schoenauer, director of that firm. In 1903 Greece adopted a military rifle of this pattern in cal. 6.5 mm. In that same year the Steyr firm offered a sporting carbine chambered for the same cartridge, designated 6.5x53 mm. Mannlicher-Schoenauer. (This cartridge was also known as the 6.7x53 mm. M. S. as it was Austrian practice to denote caliber by bullet diameter rather than bore diameter.) The cal. 6.5 mm. Model 1903 carbine was regularly furnished with 17.7" barrel, which made the arm both light and compact. The long cal. 6.5 mm. bullets penetrated well and the

## Parts Legend

1. Ejector screw
2. Ejector
3. Bolt head
4. Extractor
5. Firing pin
6. Firing pin spring
7. Bolt, stripped
8. Safety catch spring
9. Safety catch
10. Cocking piece
11. Firing pin nut
12. Bolt, assembled
13. Bolt stop
14. Bolt stop spring
15. Bolt stop pin
16. Rear sight
17. Barrel and receiver
18. Front sight
19. Cartridge stop screw
20. Cartridge stop spring
21. Cartridge stop
22. Bolt tension spring
23. Sear
24. Sear spring
25. Sear carrier
26. Sear pins (3)
27. Trigger connection
28. Magazine follower
29. Magazine box
30. Floorplate spring retainer
31. Rear magazine bearing
32. Magazine spring
33. Front magazine bearing
34. Carbine stock
35. Fore-end cap
36. Fore-end cap screw
37. Front swivel screw
38. Front swivel
39. Front receiver screw
40. Floorplate spring
41. Floorplate
42. Set trigger mainspring screw
43. Set trigger mainspring
44. Set trigger housing
45. Set trigger sear spring
46. Trigger pin, rear
47. Trigger pin, front
48. Trigger sear
49. Front trigger
50. Rear trigger
51. Adjusting screw
52. Trigger guard
53. Trigger guard screw
54. Rear receiver screw





little Model 1903 carbine was at one time used by experienced hunters for taking thick-skinned African game up to and including elephant.

In 1905 the Steyr firm offered the Model 1905 Mannlicher-Schoenauer rifle in cal. 9x56 mm. M. S.

The Model 1908 Mannlicher-Schoenauer rifle in cal. 8x56 mm. M. S. (or 8.2x56 mm. M. S.) was introduced in 1908. The Model 1910 chambered for the 9.5x57 mm. M.S. cartridge was the final model offered prior to World War I.

Following World War I the Mannlicher-Schoenauer rifle and carbine were offered in several additional calibers, including .30-'06, 7x57 mm. Mauser, 7x64 mm. Brenneke, 8x60 mm. Mauser, 9.3x62 mm. Mauser, and 10.75x68 mm. Mauser. The Mannlicher-Schoenauer actions were also purchased by other European and English arms makers for use in building sporting rifles.

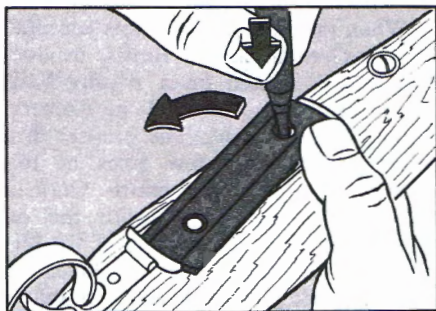
In 1929 the Steyr firm merged with Daimler-Puch, a large automobile manufacturer. The firm name then became Steyr-Daimler-Puch, A. G.

Production of these rifles was discontinued during World War II and was not resumed until 1950. In that year Steyr-Daimler-Puch, A. G., resumed limited production of sporting rifles. There were some design changes in the postwar rifle. An additional pivoted side safety was added and bolt handle was altered to provide clearance under low-mounted scope sights. Also, a flat surface was milled on left side of receiver to accept scope mount bases. A dummy side-plate was furnished to fill this cut when scope mount base was not attached. Calibers offered in 1950 included 6.5x54 mm. M. S., .257 Roberts, .270 Winchester, and .30-'06.

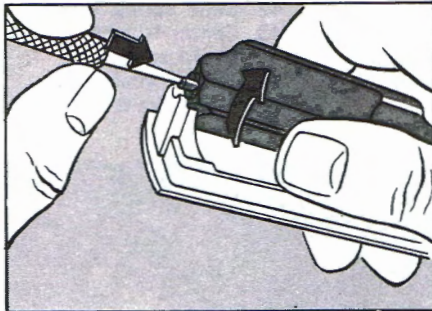
In succeeding years other calibers have been offered including 6.5x68 mm., 8x68S, .243 Winchester, .308

Winchester, .264 Winchester Magnum, .257 Weatherby Magnum, .338 Winchester Magnum, and .458 Winchester Magnum. The bolt handle on current models is bent back to place end of bolt handle as close as possible to the trigger. The stock has been extensively modernized from the original style.

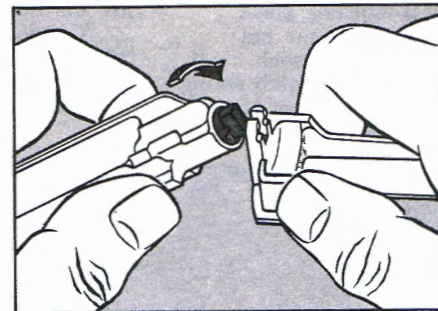
Through the years both full- and half-stock models have been offered and the purchaser has had a choice of single trigger or double-set triggers. Some models have been available with take-down feature. It is important to note that the cartridge platform (magazine follower) in the Schoenauer rotary magazine is milled to accommodate a specific cartridge. Conversion of these rifles to another cartridge almost always requires substitution of the proper cartridge platform. In this respect the Schoenauer magazine system is not nearly as flexible as that of the Mauser staggered-column box magazine.



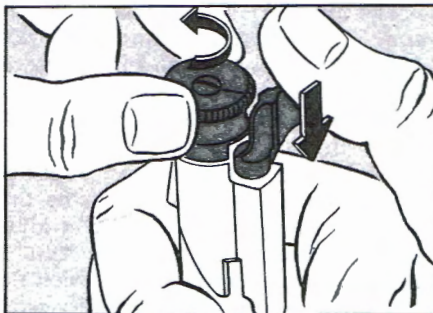
**1** Mannlicher-Schoenauer magazines can be unloaded by opening the bolt (12) and then depressing the cartridge stop (21), or by removing the magazine assembly. To remove the magazine assembly, insert a cartridge point into the front hole in the floorplate (41). Depress the floorplate spring (40) and rotate the plate until it is free of the undercuts in the receiver, then lift out the assembly



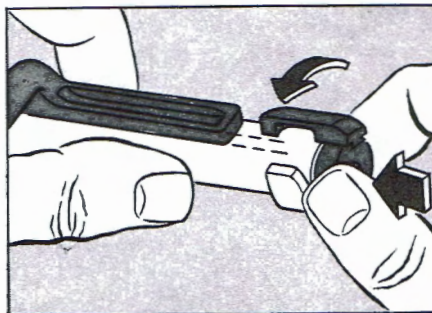
**2** The magazine assembly should be cleaned and lightly oiled from time to time. To remove the follower (28), use a thin punch to depress the rear magazine bearing (31) or front magazine bearing (33). When bearing is clear of its seat, lift out the follower. At this point the follower still contains the front and rear bearings and the magazine spring (32)



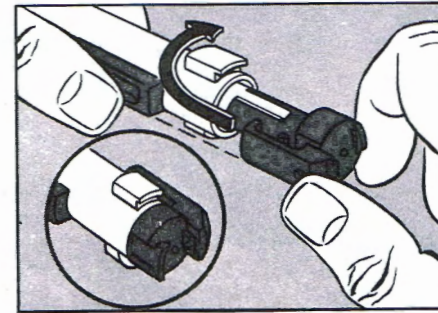
**3** To remove the magazine spring and magazine follower bearings, use the magazine box (29) as a wrench. Insert the tapered magazine bearing (33) into the notch and turn the follower as shown, and the bearing will unlock from the follower and can be pulled out with the magazine spring and rear bearing



**4** To remove the bolt (12), pull it to the rear and depress the bolt stop (13). To disassemble the bolt, first rotate the cocking piece (10) until it snaps all the way forward and firing pin protrudes from the bolt face. Then depress safety catch (9) as shown and turn the firing pin nut (11) counterclockwise 90° until it unlocks. Ease off the firing pin nut and cocking piece with the safety catch



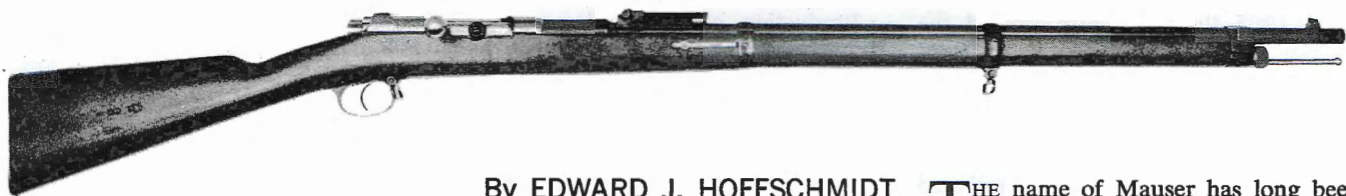
**5** After the cocking piece assembly has been removed, the firing pin (5) and firing pin spring (6) can be removed. Remember the firing pin is under heavy spring pressure, therefore hold the bolt head tight when turning it as shown. Align the ejector (2) with the rib on the bolt and ease off the bolt head (3)



**6** To replace the firing pin assembly, insert the pin (5) and spring (6) into the bolt. Put the bolt head (3) over the firing pin and push the bolt head into the bolt, lining up the ejector (2) with the rib on the bolt. Then turn the ejector 180° opposite the bolt rib. The cocking piece can be reassembled by reversing step 4 ■



# MAUSER MODEL 71/84 RIFLE



By EDWARD J. HOFFSCHMIDT

## Parts Legend

- |                         |                             |                                |
|-------------------------|-----------------------------|--------------------------------|
| 1. Ejector              | 15. Cutoff spring screw     | 31. Sear spring                |
| 2. Bolt head            | 16. Cutoff spring           | 32. Sear                       |
| 3. Extractor            | 17. Cutoff lever            | 33. Trigger pin                |
| 4. Firing pin           | 18. Cartridge lifter detent | 34. Trigger                    |
| 5. Firing pin spring    | 19. Detent retainer screw   | 35. Stock                      |
| 6. Bolt body            | 20. Cartridge stop pin      | 36. Forward band               |
| 7. Retainer pin         | 21. Cartridge stop          | 37. Cross key                  |
| 8. Bolt stop            | 22. Barrel and receiver     | 38. Key-retaining screw        |
| 9. Bolt stop screw      | 23. Magazine tube           | 39. Middle band                |
| 10. Cocking piece       | 24. Magazine spring         | 40. Rear band                  |
| 11. Firing pin nut      | 25. Magazine follower       | 41. Band spring                |
| 12. Safety catch        | 26. Cartridge lifter        | 42. Band spring screw          |
| 13. Safety catch spring | 27. Cartridge lifter hinge  | 43. Center trigger guard screw |
| 14. Rear guard screw    | 28. Hinge lock screw        | 44. Trigger guard              |
|                         | 29. Sear hinge pin          | 45. Front guard screw          |
|                         | 30. Cutoff cam              |                                |

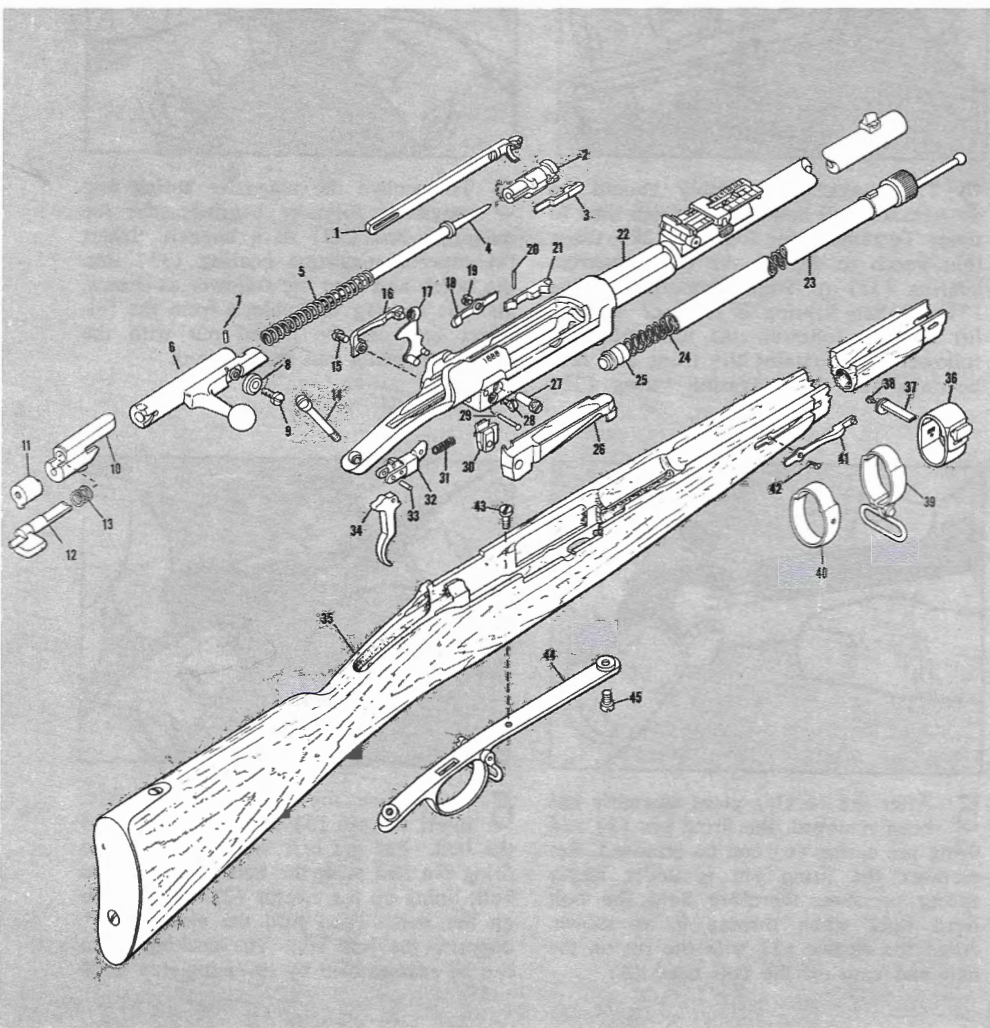
THE name of Mauser has long been identified with German firearms. It started back in 1871 when the Prussian Army adopted the cal. 11 mm. Model 71 single-shot rifle. It was an immediate success since it used a brass case in lieu of the old paper-covered needle-gun cartridge.

When the need arose for a magazine-fed weapon, Mauser submitted his design which combined the Model 71 bolt system and the Winchester-type tube feed. The tube held 8 rounds; if one round was placed in the chamber and another on the cartridge lifter, the rifle then became a 10-shot repeater.

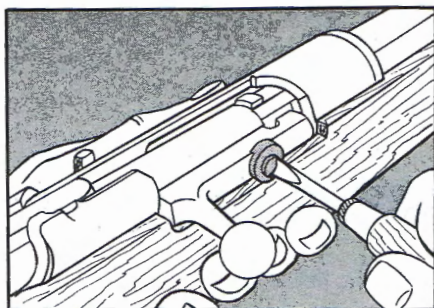
When the Model 71/84 was accepted by the German armed forces, production was instituted on a royalty basis at the government arsenals at Amberg, Spandau, and Erfurt. The Mauser firm manufactured very few rifles of this model. By 1887 the entire German Army had been armed with the repeating rifle. But the success of the big-bore gun was short lived. The invention of smokeless powder made it obsolete, and the gun was eventually replaced by the Model 88 in cal. 8 mm.

The Model 71/84 remained in Service long enough to see use in the Boxer Rebellion in 1900-1901. When World War I broke out, some units of Jaeger troops as well as Colonial troops in East Africa were still armed with the old weapon. Some even turned up in the hands of the Volkssturm during World War II.

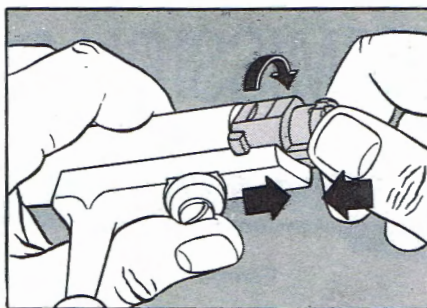
The Model 71/84 is a simple, rugged arm. The massive operating parts were designed for hard use and long service. To load the gun, open the bolt, and push the cutoff to the rear. The cartridge lifter can then be depressed and the cartridges fed into the magazine tube. The bolt does not have the forward locking lugs that made later Mausers so famous. Instead, the bolt is locked by the massive rib to which the bolt handle is attached. The safety catch arrangement used on this gun was carried down with little change to all later Mausers. When it is facing left, the gun is ready to fire. When turned to the right, it locks the firing mechanism and the bolt. The gun is equipped with a cutoff which allows the full magazine to be held in reserve while the gun is operated as a single-shot weapon.



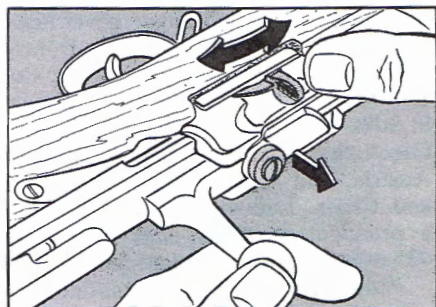




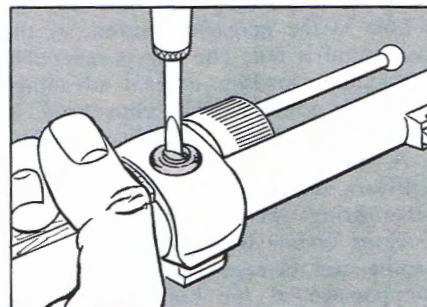
**1** The first step in the removal of the Mauser 71/84 bolt is to loosen the bolt stop screw (9). This will allow the round washer-like bolt stop (8) to move upward and clear the receiver bridge. Do not try to remove the bolt stop screw. It cannot be removed unless the retainer pin (7) is knocked out and this is rarely necessary. Then push the cutoff lever (17) all the way forward.



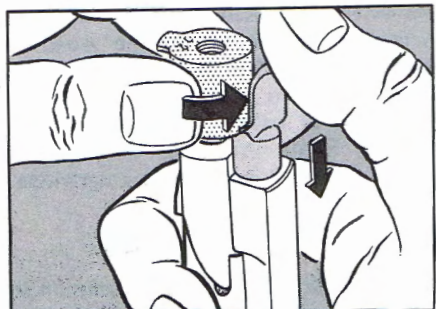
**4** Once the ejector has been removed, the bolt head (2) can be disassembled regardless of whether the firing pin nut is on or off. The bolt head is retained by a lug that engages in the rib on the bolt. To remove the bolt head, simply turn it clockwise until the lug is free, then pull the bolt head out. If the firing pin nut (11) has been removed, the bolt head must be pushed toward the bolt while turning, since the head will be under heavy spring pressure as soon as the lug clears the bolt rib.



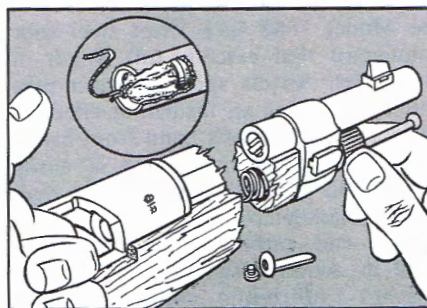
**2** Turn the weapon on its side to keep the bolt stop (8) from falling back on the bolt and preventing its removal. Push the cutoff lever (17) back about  $\frac{1}{8}$ " or enough to cam the cutoff spring tail (16) out of the path of the bolt. Pull bolt to rear and out of gun. Do not open or close the bolt violently when the washer-like bolt stop is loose as the ejector will batter the portion of the cutoff spring that protrudes through the receiver.



**5** The bands must be removed to disassemble the gun. The front band (36) is retained by a cross key (37). The key is in turn retained by a lock screw (38). Therefore, remove the lock screw and drive the key out. The magazine tube can be pulled out when the key is removed.



**3** To disassemble the bolt, the ejector (1) must be removed. This can be lifted off easily since it is only held on by a half-moon spring. Next turn the cocking piece (10) assembly until the cocking piece cam drops into its cam groove on the bolt (6). Then push down the safety catch (12) as shown until it is free of the notch in the firing pin nut (11). Screw the firing pin nut off the firing pin and remove the cocking piece.



**6** Difficulty will sometimes be encountered when replacing the magazine tube. If so, depress the cartridge lifter (26) and push the follower forward well into the magazine tube with the little finger. At the same time push the magazine tube into its seat in the receiver or tie a string to a piece of rag and stuff it in the tube to hold the magazine follower (25) and spring assembly a short distance down the tube. The magazine tube can then be easily reassembled into its seat in the receiver and the rag pulled out freeing the magazine follower.

## A MAN TO REMEMBER

A. A. CHASSEPOT

*Invented the Chassepot  
needlegun*

*Born—Mutzig, France, 1833*

*Died—Paris, 1905*

ANTOINE ALPHONSE CHASSEPOT was born and reared as a gun-maker. His father was an armorer at Mutzig, and the younger Chassepot early decided to follow his father's profession. At 23 he was sufficiently skilled to obtain work in the government arms factory at Mutzig, where he made such an outstanding record that he was transferred to the central arms plant in Paris within 2 years. There he quickly became director of the factory and Controller of Arms for the nation.

It was while he was working in Paris that Chassepot began his experimentation in rifle design. In 1863 he invented his first breech-loading percussion rifle. It was a good arm, but never became popular, probably because the percussion system was on the way out. Three years later, in 1866, he developed his famous breech-loading bolt-action needlegun which took a center-primed paper cartridge. The new rifle was an immediate success, being adopted by the French Army as the Model 1866. It was the first breech-loader used by the French Army, and the system was adopted for carbines and musketoons as well as for rifles. In 1874 it was modified by Gras to take a metallic cartridge, and continued in use until supplanted by the Lebel in 1886. The Saxon Army also adopted the system in 1873 (captured arms from Franco-Prussian War converted to handle 11 mm. Mauser cartridge).

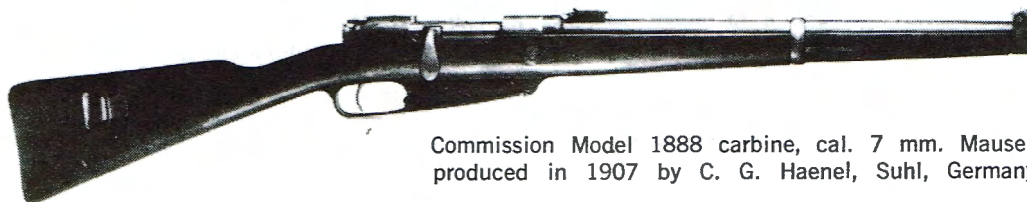
For his invention Chassepot received the cross of the Legion of Honor in 1866. He remained at his job in the arms factory but seems to have ceased his experimental work and gradually drifted into obscurity until his death at the age of 72.—  
HAROLD L. PETERSON



# MODEL 1888 COMMISSION RIFLE



German Commission Model 1888 rifle, cal. 8 mm. Mauser.



Commission Model 1888 carbine, cal. 7 mm. Mauser, produced in 1907 by C. G. Haenel, Suhl, Germany.

By DENNIS RIORDAN

**I**N 1886 France established a precedent among the military powers by being the first to adopt a smokeless-powder magazine rifle. This rifle was 8 mm., the smallest caliber in military use at that time. The innovations prompted other nations to strive for improved armament, and Germany adopted a 7.9 mm. magazine rifle and carbine in 1888.

Developed by the German Rifle Testing Commission at Spandau, near Berlin, the German Commission Model 1888 turnbolt rifle and carbine fired the 7.9 mm. (also called 8 mm.) Model 1888 rimless cartridge loaded with smokeless power and a 227-gr. round-nose jacketed bullet. In designing the Model 1888, the Commission used the separate non-rotary bolt head and several other features of the Mauser Model 1871 and 1871/84 German Service rifles as well as the Mannlicher box magazine and cartridge clip. The Model 1888 is thus often called a Mauser 88, Mannlicher 88, or Mauser-Mannlicher, although the term Commission Model 88 is more accurate. Mauser and Mannlicher were not members of the Commission, and Mauser was disappointed that Germany had adopted the Model 1888 without consulting him.

Dual-opposed locking lugs at the front of the Model 1888 bolt engage locking shoulders in the receiver ring. This gives strong symmetrical locking. A similar arrangement is used in French Lebel and Berthier rifles and smokeless-powder Mausers. The Lebel preceded the Model 1888 by two years and was the first smokeless-powder rifle with this locking system.

The single-column non-detachable magazine is loaded from the top with a

sheet-steel clip containing five rounds. Both clip and cartridges enter the magazine, and the empty clip falls through a hole in the magazine bottom as the last round is fed. The clip is reversible to facilitate loading, a great advantage over the non-reversible clips used in Austrian Mannlicher straight-pull rifles.

A heavy cocking piece that holds the half-turn safety is retained on the one-piece firing pin by a firing pin nut. Cocking occurs on upturn of the bolt handle, and the receiver bridge is slotted for passage of the bolt handle. The heavy cocking piece with safety attached results in slow lock time. Also, the forward position of the bolt handle is not conducive to fast operation with the rifle on the shoulder.

## Unusual feature

One of the more unusual features of the Model 1888 is a sheet steel tube handguard that extends full length of the barrel. An air space between tube and barrel gives an insulating effect to help protect the user's hand from barrel heat. This metal handguard is easily dented and generally less efficient than a wood handguard.

Rifle and carbine versions are the same in action design except that the rifle has a horizontal bolt handle while the carbine has a turned-down flat handle for mounted use. Length of the rifle barrel is 29.1". The carbine barrel is only 17.6" long, and the fore-end extends to the muzzle. A sling is attached to the bottom of the rifle and on the left of the carbine.

There is also a Model 1891 short rifle version of the Model 1888. Intended for special troops, it is essentially the same as the Model 1888 carbine but has a stacking rod on the bottom of the fore-end near the muzzle.

The Model 1888 was produced in large quantity by German government arsenals at Spandau, Erfurt, Danzig, and Amberg, by Ludwig Loewe & Co., Berlin, C. G. Haenel and V. C. Schilling in Suhl, Oesterreichische Waffenfabriks-Gesellschaft (Austrian Arms Co.), Steyr, Austria, and also by firms in Belgium and China. Ludwig Loewe & Co. was a principal producer, and turned out 425,000 for the German government.

Although replaced as a first-line German arm in 1898 by the Mauser Model 1898 rifle, the Model 1888 was used extensively by Germany until the end of World War I, chiefly in a substitute-standard role. Austria-Hungary, Yugoslavia, Ethiopia, China, and various South American nations also used the Model 1888. The official Austro-Hungarian designation for this rifle was 8 mm. Repetiergewehr M13. Many Model 1888 rifles used by China were equipped with a wooden handguard and tangent rear sight. The Model 1888 was not extensively used in South America. According to records of the Austrian Arms Co., this firm sold 14,000 Model 1888's to Peru and 3,400 to Brazil. Some Model 1888's, particularly those used in South America, were chambered for the 7 mm. Mauser cartridge.

## Popular surplus

The Model 1888 is not uncommon in the U.S. since thousands were brought back by returning soldiers at the close of World War I. Also, many were sold as surplus. Most specimens are in 8 mm. Mauser caliber. Those made for German use bear an "S" on the receiver ring. This denotes that the arm was modified to fire the pointed-bullet S version of the 8 mm. Mauser cartridge adopted by Germany about 1905. **Despite this modification, it is not ad-**



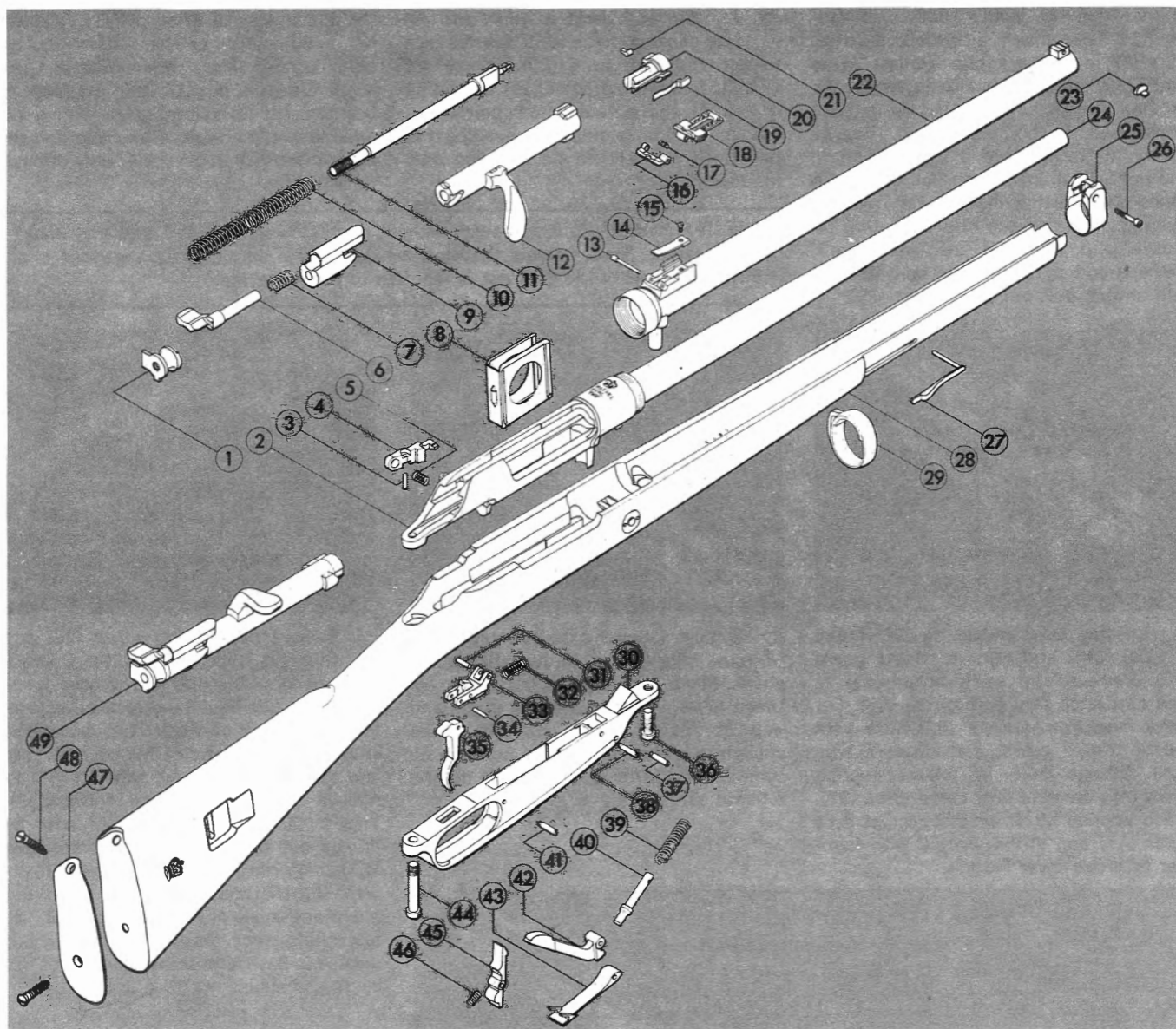
visible to fire the S cartridge in a Model 1888, as this round gives considerably higher pressure than the Model 1888 cartridge with round-nose bullet. Also, the bullet of the S cartridge is .323" diameter, slightly larger than the groove diameter of the Model 1888 barrel. The proper ammunition for an 8 mm. Model 1888 is the 1888 load with .318" diameter round-nose bullet. Sporting versions of this cartridge were produced in Europe until recently but

are now generally unavailable.

Many German Model 1888's used during World War I were fitted with a sheet steel dust cover over the hole in the bottom of the magazine. A plunger and coil spring on the inner side of this cover eject the empty clip through the top of the magazine when the clip latch is depressed. Another somewhat similar modification also used a dust cover over the magazine bottom, but changed the arm from a clip-loader to a charger-

loader. This change was accomplished by cutting charger slots in the receiver and fitting a spring-loaded cartridge retaining rib in the upper part of the magazine.

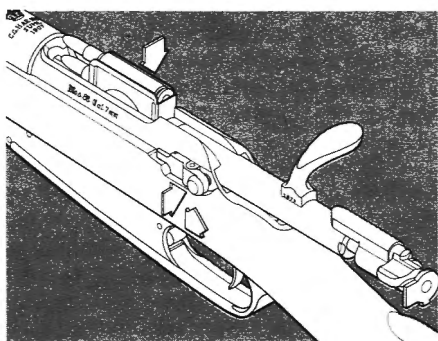
Well designed for its time, the Model 1888 won many friends because of its smooth-working action. It served as the basis for several models of Mannlicher turnbolt rifles, the Mannlicher-Haenel sporting rifle, and the Mannlicher-Schoenauer rifle and carbine.



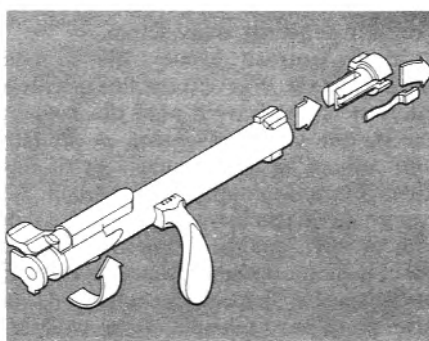
#### PARTS LEGEND

- |                       |                                     |                       |                         |                           |
|-----------------------|-------------------------------------|-----------------------|-------------------------|---------------------------|
| 1. Firing pin nut     | 11. Firing pin                      | 19. Extractor         | 30. Trigger guard       | 40. Follower spring guide |
| 2. Receiver           | 12. Bolt                            | 20. Bolt head         | 31. Sear pin            | 41. Clip latch screw      |
| 3. Bolt stop pin      | 13. Rear sight hinge pin            | 21. Ejector           | 32. Sear spring         | 42. Magazine follower     |
| 4. Bolt stop          | 14. Sight spring                    | 22. Barrel jacket     | 33. Sear                | 43. Dust cover            |
| 5. Bolt stop spring   | 15. Sight spring screw              | 23. Front sight       | 34. Trigger pin         | 44. Rear guard screw      |
| 6. Safety             | 16. Fixed range leaf                | 24. Barrel            | 35. Trigger             | 45. Clip latch            |
| 7. Safety spring      | 17. Fixed range leaf spring         | 25. Upper band        | 36. Front guard screw   | 46. Clip latch spring     |
| 8. Cartridge clip     | 18. Adjustable range leaf and slide | 26. Upper band screw  | 37. Dust cover screw    | 47. Buttplate             |
| 9. Cocking piece      |                                     | 27. Lower band spring | 38. Follower axle screw | 48. Buttplate screw (2)   |
| 10. Firing pin spring |                                     | 28. Stock             | 39. Follower spring     | 49. Assembled bolt        |
|                       |                                     | 29. Lower band        |                         |                           |

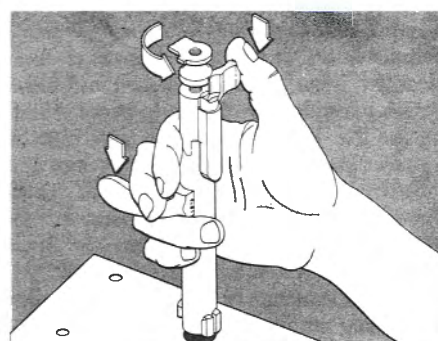




**1** To load the Model 1888, open bolt (12) and insert a loaded cartridge clip (8) in receiver clip guides. Press cartridges down with thumb until clip latches in place. Top round is fed and chambered as bolt is closed. Engage safety (6) by rotating it a half turn to the right. To unload, open bolt and catch round by placing hand over receiver opening. Pressing the clip latch (45) releases clip which is ejected upward. Remove bolt by depressing bolt stop (4) and sliding bolt out of receiver (2).

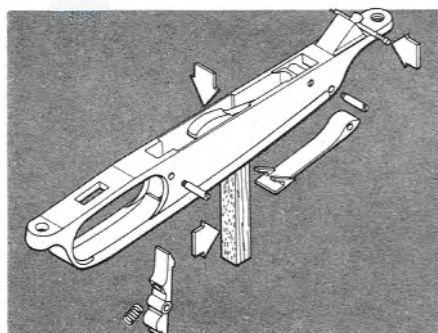


**2** To strip bolt, hold it firmly and rotate cocking piece (9) a quarter turn to left. Pull bolt head (20) forward out of bolt. Remove extractor (19) by sliding it forward and outward from bolt head. Ejector (21) is retained by peening the bolt head and should be removed only for repair.

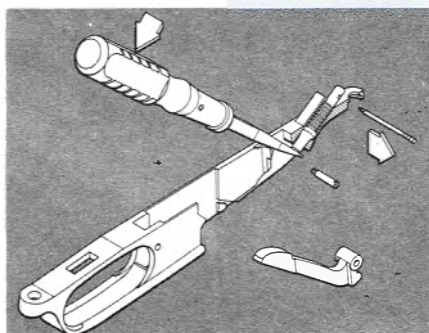


**3** Place nose of firing pin (11) against a wood block and hold downward on bolt. Depress safety with thumb and unscrew firing pin nut (1). Ease pressure on bolt and lift off safety, safety spring (7) and cocking piece (9). Firing pin and firing pin spring (10) come out through front of bolt.

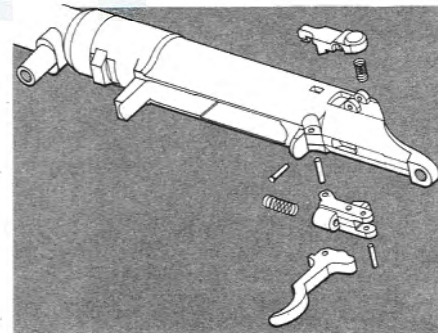
Note: It is possible to fire this gun without the bolt head installed, and this would be dangerous. Thus, be sure that bolt head is in gun during firing. Cartridge clip (8) is not a part of the gun, but is required to use magazine.



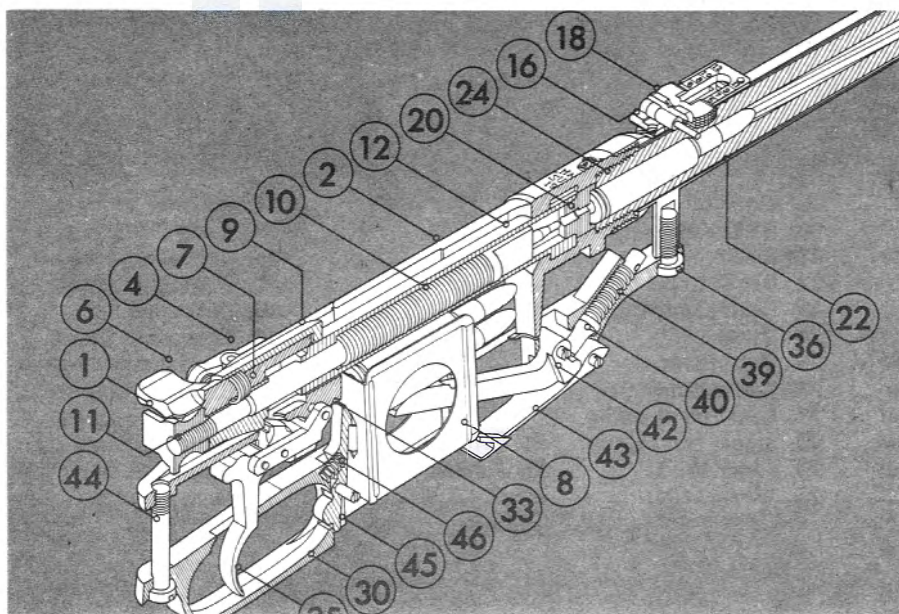
**4** Unscrew front and rear guard screws (36) (44) and remove trigger guard (30). Remove clip latch screw (41) to free clip latch (45) and spring (46). Depress magazine follower (42) flush with top of trigger guard, and insert a wire brad through hole in follower spring guide (40). Remove dust cover screw (37). Place wooden block against rear of dust cover (43) and strike sharply with hammer to break cover loose.



**5** Remove follower axle screw (38) and pull follower out through bottom of guard. Place wide screwdriver blade between head of follower spring guide and web of trigger guard, and lift guide enough to remove brad. Ease pressure on screwdriver and remove spring guide and follower spring (39).



**6** Remove upper band screw (26) and slide off upper band (25). Depress lower band spring (27) and remove lower band (29). Lift barrel and receiver assembly upward out of stock (28). Drive bolt stop pin (3) downward to free bolt stop and spring (5). Drift out sear pin (31) to remove sear (33) and sear spring (32). Trigger (35) is detached from sear by driving out trigger pin (34). Reassembly is accomplished in reverse order. In assembling the bolt, the flat on the firing pin shank must align with a similar flat in cocking piece. Screw on firing pin nut until it is flush with firing pin and locked by the safety.



**7** Cutaway shows relationship of interior parts. Carbine is shown cocked with safety disengaged. One cartridge has been chambered while two more remain in magazine. Parts are number keyed to parts legend on page 74. ■



# 1891 MAUSER RIFLE ARGENTINE MODEL

By THOMAS E. WESSEL

THE Argentine Model 1891 Mauser military rifle was adopted in that year, and the initial production contract calling for 180,000 rifles and 30,000 carbines was granted to Ludwig Loewe & Co. of Berlin. Additional arms of this pattern were made later for Argentina by Deutsche Waffen und Munitionsfabriken (DWM) in Berlin. DWM had taken control of Loewe in 1896.

These arms were chambered for the

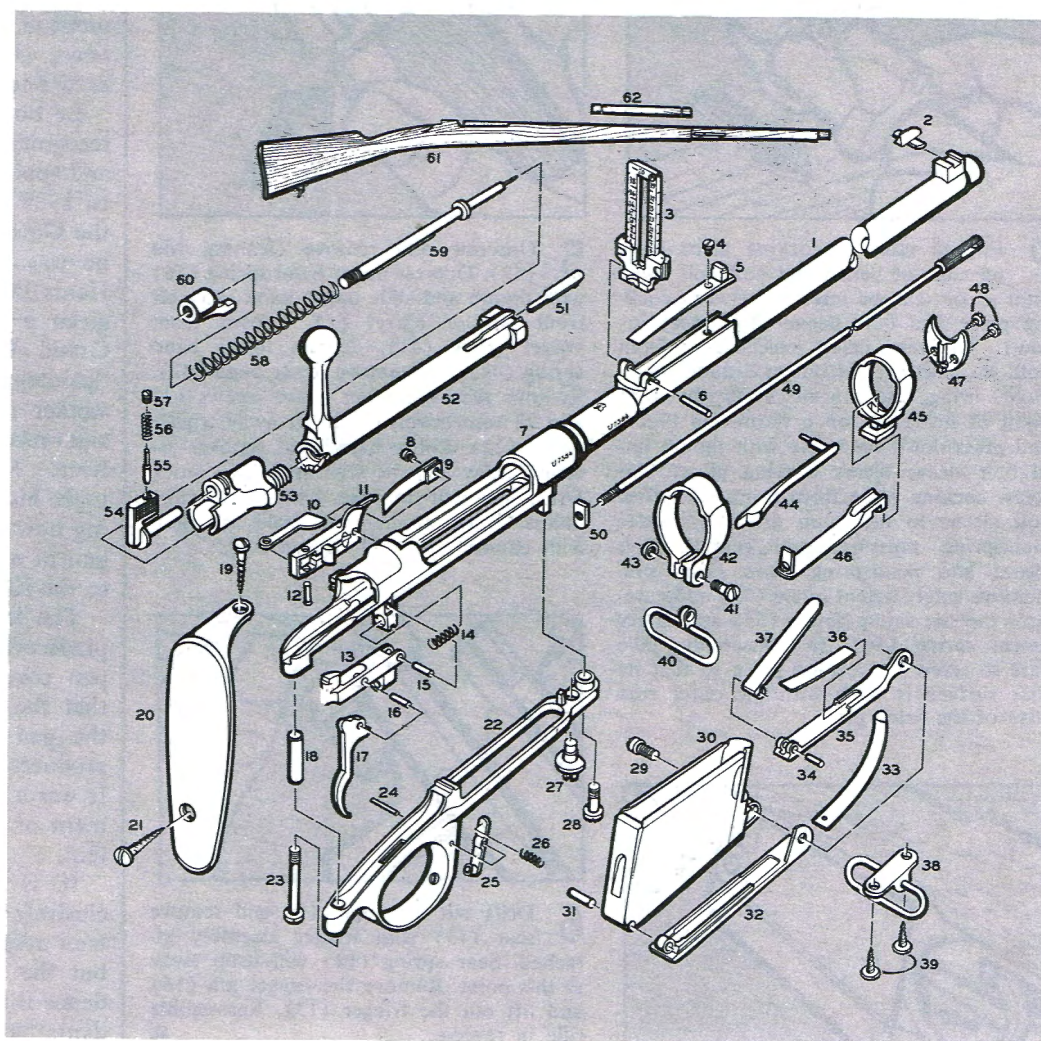
7.65 mm. Mauser cartridge loaded originally with 212-gr. round-nose bullet to a muzzle velocity of approximately 2060 feet per second. Later Argentine Service ammunition was loaded with 154-gr. pointed bullet.

The Argentine Model 1891 rifle was essentially identical in design to the earlier Turkish Model 1890 rifle and was chambered for the same cartridge. The action cocks on closing of the bolt.

There is no auxiliary bolt safety lug as in the later Mauser Model 1898 action. The stepped barrel contour of the Turkish Model 1890 rifle was retained in the Argentine Model 1891 version. Inletting cuts in the stock fore-end for the barrel shoulders are relieved to prevent binding of the barrel as it elongates from heating in rapid fire. This design feature was carried over to later Mauser bolt-action military rifles.

## Parts Legend

1. Barrel
2. Front sight
3. Rear sight
4. Rear sight spring screw
5. Rear sight spring
6. Rear sight pin
7. Receiver
8. Bolt stop spring screw
9. Bolt stop spring
10. Ejector
11. Bolt stop
12. Bolt stop pin
13. Sear
14. Sear spring
15. Sear pin
16. Trigger pin
17. Trigger
18. Rear guard screw bushing
19. Top buttplate screw
20. Buttplate
21. Rear buttplate screw
22. Trigger guard
23. Rear guard screw
24. Magazine latch pin
25. Magazine latch
26. Magazine latch spring
27. Magazine catch
28. Front guard screw
29. Follower screw
30. Magazine
31. Floorplate pin
32. Floorplate
33. Floorplate spring
34. Follower pin
35. Follower arm
36. Follower spring
37. Magazine follower
38. Rear swivel
39. Rear swivel screw (2)
40. Front swivel
41. Front swivel screw
42. Lower band
43. Front swivel nut \*
44. Lower band spring
45. Upper band



46. Upper band spring
47. Front plate
48. Front plate screw (2)
49. Cleaning rod
50. Cleaning rod stop

51. Extractor
52. Bolt
53. Bolt sleeve
54. Safety
55. Safety detent

56. Safety detent spring
57. Safety detent screw
58. Mainspring
59. Firing pin
60. Cocking piece

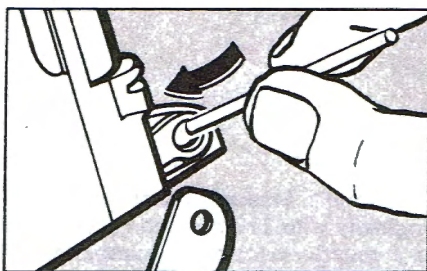
61. Stock
62. Handguard

\* Permanently assembled to other part.

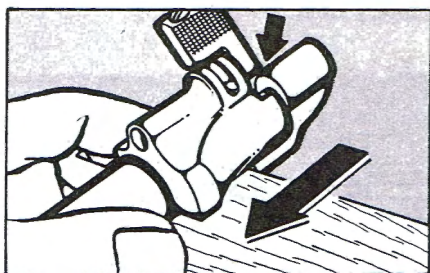




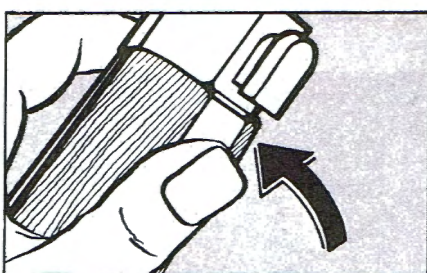
**1** Remove bolt assembly from receiver by rotating both safety (54) and then bolt (52) counterclockwise and withdrawing rearward as far as assembly will go. Pull bolt stop (11) to the left and remove bolt.



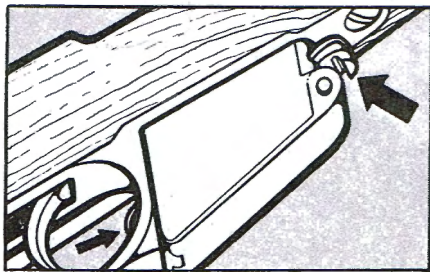
**4** Remove follower screw (29) and swing floorplate (32) down. Using a small pick, push follower arm (35) pivoting leg up into magazine. Follower assembly may now be removed from magazine.



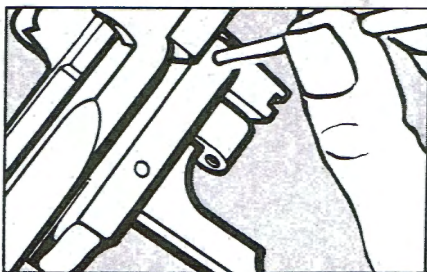
**2** Engage nose of cocking piece (60) on edge of bench and pull bolt away until a coin can be inserted between cocking piece and bolt sleeve (53, upper arrow). Unscrew firing mechanism from bolt. Be most careful not to dislodge coin. Hold firing mechanism vertically with point of firing pin on a hardwood block, and press down on safety with thumb until bolt sleeve clears cocking piece. Unscrew cocking piece from firing pin, allow bolt sleeve to move up gradually under mainspring pressure, and remove bolt sleeve and mainspring from firing pin. Remove safety detent screw (57) and carefully tap out safety detent (55) and safety detent spring (56). In reassembly, take care to screw on cocking piece so that its rear surface is flush with the outer rear edge of the firing pin.



**5** Unscrew and remove cleaning rod (49). Depress upper band spring (46) with thumb and slide upper band (45) off front end of barrel (1). Loosen front swivel screw (41), depress lower band spring (44), and remove lower band (42). Remove rear and front guard screws (23 and 28 respectively) and lift away trigger guard (22). Entire barrel and receiver assembly may now be separated from stock (61). Do not remove handguard (62) unless necessary as it is held in place with carefully twisted copper wire.



**3** Turn rifle over. Give magazine catch (27—arrow, upper right) a half-turn counterclockwise. Depress magazine latch (25—arrow, lower left) and remove the magazine (30).



**6** Drift out sear pin (15) and remove sear (13) with trigger assembly attached. Sear spring (14) will drop away at this point. Remove the trigger pin (16) and lift out the trigger (17). Reassemble rifle in reverse. ■

## A MAN TO REMEMBER

### MARIN LE BOURGEOYS

*Invented the true flintlock*

Born—Lisieux, France

about 1550

Died—Lisieux, 1634

**M**ARIN LE BOURGEOYS was descended from a family of locksmiths, clockmakers, gunsmiths, and armorers. From his talented ancestors he inherited the abilities and inclinations which made him the all-around genius that he was—a noted gunsmith, clockmaker, painter, sculptor, maker of musical instruments, planetariums, and other mechanical inventions. Prior to the development of the flintlock he made crossbows, wheel locks, snaphaunces, and even one air gun.

Le Bourgeoys' talents early gained recognition, and he received honors and appointments from high officials. In 1589 he was appointed painter to the Governor of Normandy; in 1598 he was made valet de chambre to Henry IV of France. In 1608 he was given a warrant of lodging in the Grand Gallery of the Louvre as "painter and valet de chambre, worker in moving globes, sculptor, and mechanical inventor" to the King. Nevertheless he continued to make his residence at Lisieux, traveling now and then to Paris to take a gun or one of his other productions to the King.

The true flintlock differs from its predecessors in having a battery and pan cover formed in one piece so that the blow from the cock opens the pan at the same time that it produces a spark from the battery. It was a simplification and improvement of the Dutch snaphaunce system.

It is impossible to prove conclusively that Le Bourgeoys was the man responsible for this invention, but the mass of circumstantial evidence is overwhelming and most students have been content at least to attribute the step to him and to place its date between 1610 and 1615.—

HAROLD L. PETERSON



# The MAUSER 98 Rifle

By E. J. Hoffschmidt

**B**E IT known that I, Paul Mauser, a subject of the Emperor of Germany, residing at Oberndorf, Germany, in the German Empire, have invented a new and useful firearm."

Whenever this preamble appeared on a patent, the gun world sat up and took notice, but of all Paul Mauser's many patents and designs, the one that made his name renowned was the 1898 rifle, which has been manufactured since that date to the present.

This rifle, noted for its strength, simplicity, and ease of manufacture, became the standard by which all other bolt-action rifles were measured. Mauser actions have been manufactured in many countries in varying degrees of quality. As good as these weapons are, few, if any, can surpass the pre-World War II products of the Oberndorf works.

Pre-war Oberndorf actions were manufactured in three basic lengths: the short, the standard, and the magnum length. The receivers themselves were machined for some 14 specific cartridges. They ranged from the #6 action, designed for the 6.5 x 54, to the #20 action, designed to handle the .416 Rigby. The #20 action was used by British gunsmiths to build even heavier caliber rifles. Actions built to handle the German 8 x 57 mm. service cartridge are by far the most common.

The pre-war Oberndorf military rifles were as well made and finished as the commercial Mausers, but they lacked the refinement found in the sporting guns. The sporting Mausers were invariably equipped with one of two types of quick-release magazine floorplates. These are a great improvement over the type found on military Mausers. To remove the floorplate on a military rifle, it is necessary to push the point of a jacketed bullet into the catch hole, pushing the plate to the rear at the same time.

The Mauser 1898 action had so many improvements that it rendered the earlier Model 95 actions virtually obsolete. The best of these was the addition of a third, or safety, locking lug at the rear of the bolt. Another safety feature is the large gas shield located at the front of the bolt sleeve (see illustration).

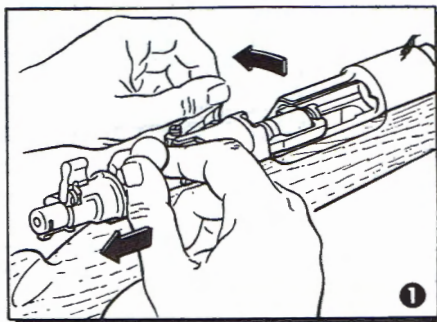
In the event of a punctured primer or a ruptured cartridge case, the hot

gases and brass are deflected away from the shooter's eyes.

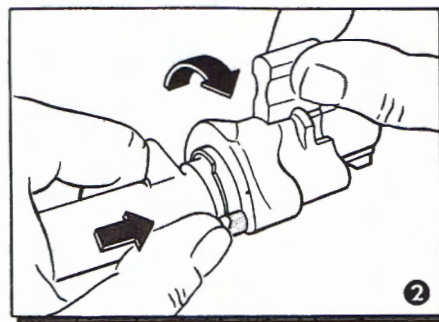
The firing pin offers greater safety than most others, in that the shoulder that the firing pin spring rests against has two flanges. These flanges take such a position when the bolt is even partly open that, should the firing pin break at the rear, it cannot go forward

and fire the cartridge in the chamber. The firing pin can go fully forward only when the bolt is fully closed and the flanges on the firing pin line up with the cuts on the inside of the bolt.

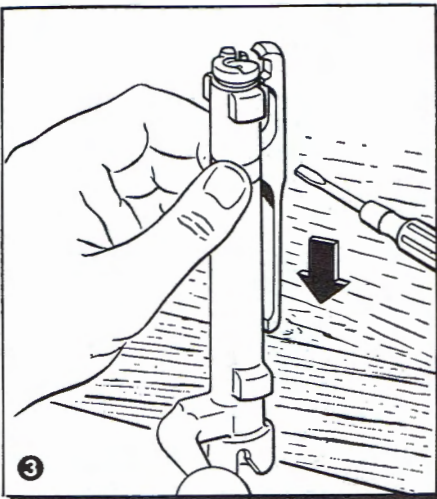
Features such as these have made the Mauser 1898 action the most widely copied and used design in the history of military and sporting arms. ♦ ♦ ♦



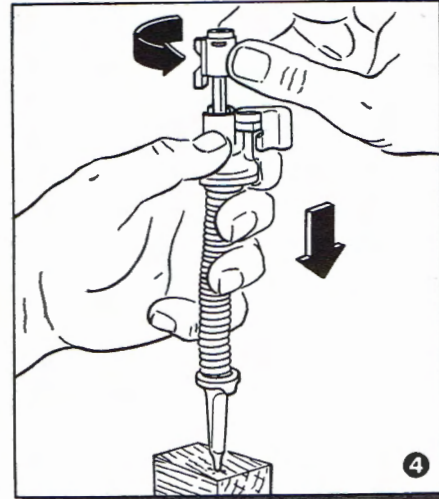
To take down the Mauser bolt (11), lift the bolt handle, pull it back to be sure the chamber is empty. Close it, and turn the safety catch (2) to the vertical position. Open the bolt again, and pull it back until it stops. Next, push the forward end of the bolt stop (13) out as far as it can go. You can now pull the bolt assembly out of the rifle



To remove the bolt sleeve and firing pin assembly (1-7), push the bolt sleeve stop (5) in as shown. When the stop pin is pushed in far enough, you will be able to screw the assembly out. As you start to turn it, it will be necessary to press the stop pin again to get it around the bolt handle

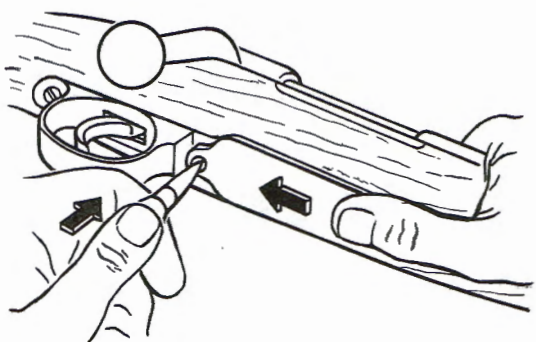


To remove the extractor (10), turn the extractor away from the bolt handle as far as it will go. Then, using a screwdriver, pry the front end of the extractor up and out of its groove in the bolt. Revolve it a bit further until it is in between the locking lugs. Tap the end of the extractor on the edge of the bench as shown. The extractor will snap free, exposing the extractor collar (9). Do not remove the extractor collar unless absolutely necessary

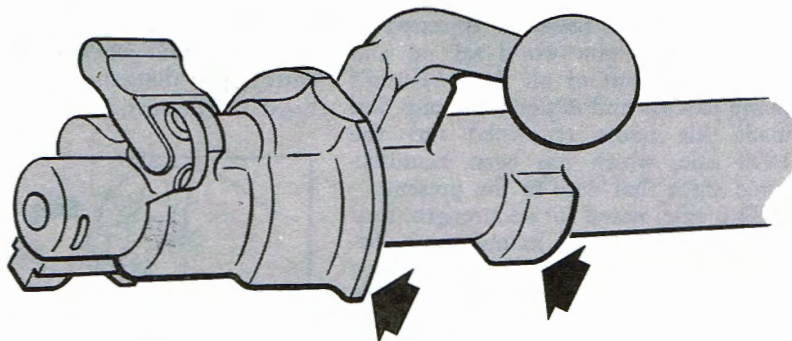


To disassemble the bolt sleeve, first rest the point of the firing pin (7) against a block of soft wood to prevent it from getting damaged. Next, grasp the bolt sleeve as shown and press down hard until the cocking piece (1) is clear of the bolt sleeve. Turn the cocking piece one-quarter turn as shown, and lift it off. Ease up on the pressure and remove the bolt sleeve (3) and firing pin spring (6). Perform this operation away from your face, for the firing pin spring is very powerful

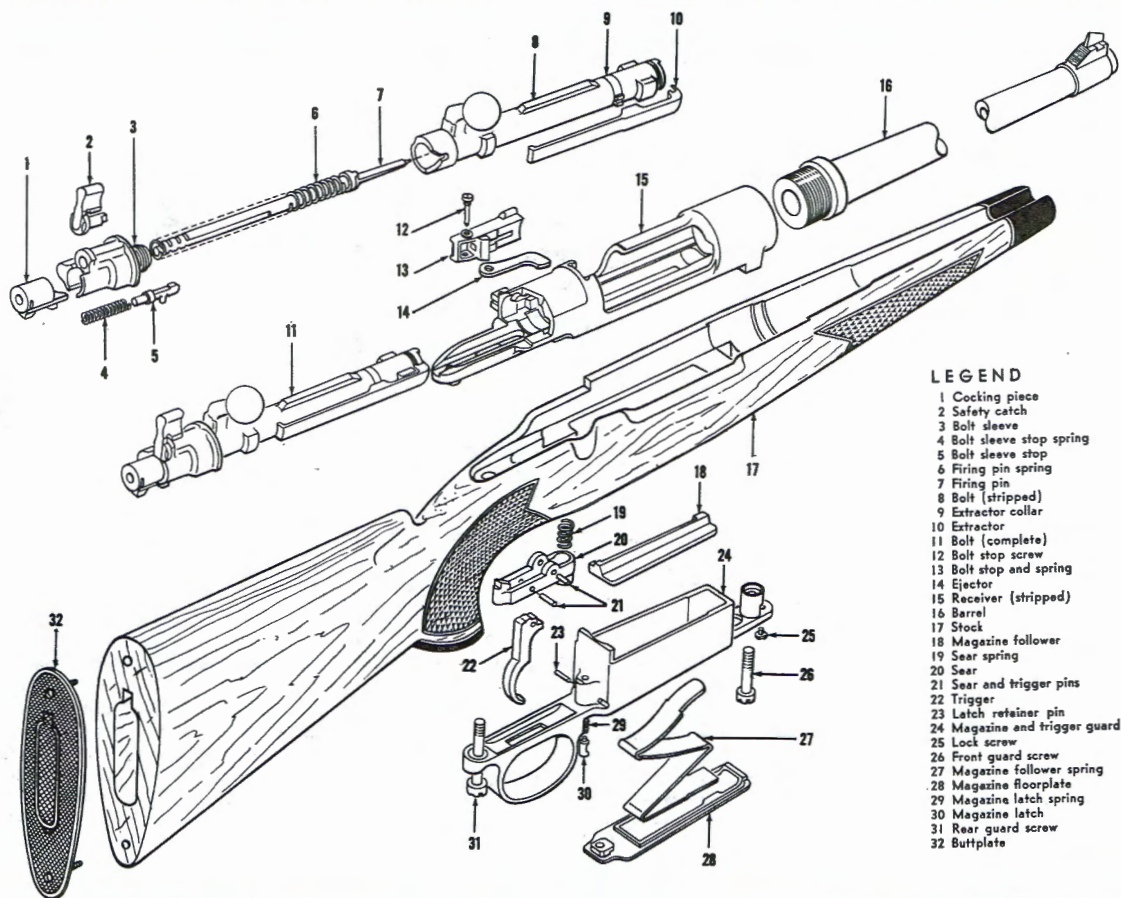




The military-type magazine floor-plate release is by far the common type, but genuine Mauser sporters rarely use it. They normally had a lever or push-latch release.



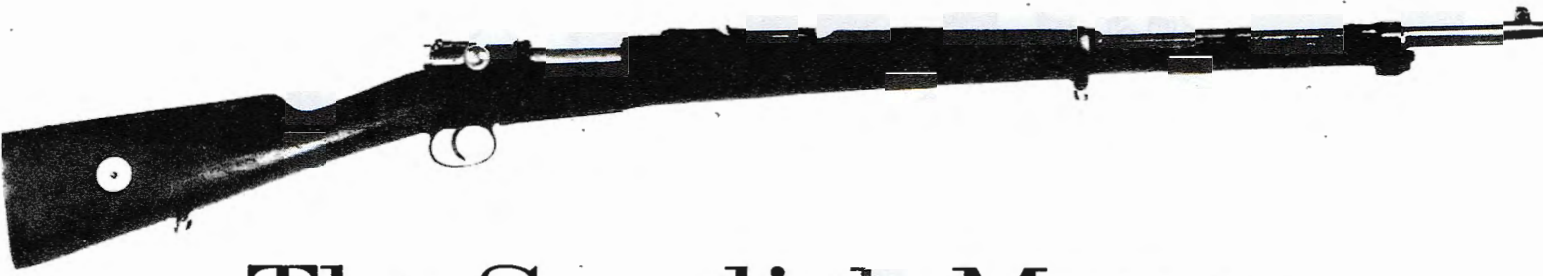
Two of the features that make the Mauser 98 so popular with shooters are the large gas shield and the third locking lug near the rear end of the bolt



#### LEGEND

- 1 Cocking piece
- 2 Safety catch
- 3 Bolt sleeve
- 4 Bolt sleeve stop spring
- 5 Bolt sleeve stop
- 6 Firing pin spring
- 7 Firing pin
- 8 Bolt (stripped)
- 9 Extractor collar
- 10 Extractor
- 11 Bolt (complete)
- 12 Bolt stop screw
- 13 Bolt stop and spring
- 14 Ejector
- 15 Receiver (stripped)
- 16 Barrel
- 17 Stock
- 18 Magazine follower
- 19 Sear spring
- 20 Sear
- 21 Sear and trigger pins
- 22 Trigger
- 23 Latch retainer pin
- 24 Magazine and trigger guard
- 25 Lock screw
- 26 Front guard screw
- 27 Magazine follower spring
- 28 Magazine floorplate
- 29 Magazine latch spring
- 30 Magazine latch
- 31 Rear guard screw
- 32 Buttplate





# The Swedish Mauser

By E. J. HOFFSCHMIDT

**T**HE Swedish 6.5 mm. Mauser rifle was one of the many developments of Paul Mauser, the German arms designer. It is made for the 6.5x55 mm. cartridge, and was produced in several models, the 1894 carbine and 1896 infantry rifle being most common. This rifle was produced in Sweden by the Carl Gustafs Government Rifle Factory and the Husqvarna Arms Co., Inc. Many of the earlier specimens were produced in Germany by the Mauser Arms Co.

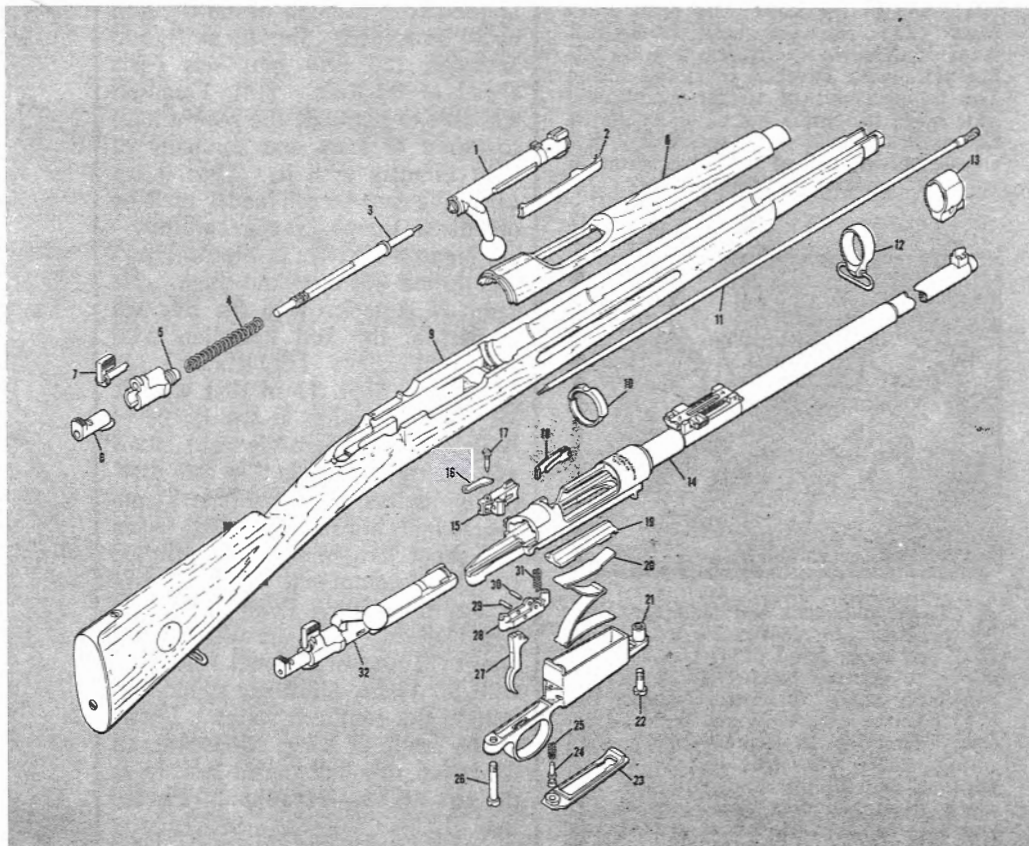
This rifle is a slight improvement over the Model 1893 Spanish rifle,

which was the first Mauser to have a staggered-column box-magazine flush with the stock. Improvements include a guide rib on the bolt, deep rounded cut in left receiver wall to facilitate magazine loading, and an upward projection on the cocking piece which permits the firing pin to be eased forward with the thumb. Although it has no safety lug and its cock-on-closing feature is unpopular with many U. S. shooters, this rifle is simple, reliable, highly accurate, and famous for its fine-quality workmanship and finish.

In addition to its long use by Sweden,

Finland employed this rifle extensively in the 1939-40 Russo-Finnish War, and a quantity was purchased and used by Denmark following World War II. Many specimens have been imported into the U. S. during the last few years and sold by arms dealers. When it has been suitably sporterized, this rifle makes a handy weapon for hunting deer and similar big game.

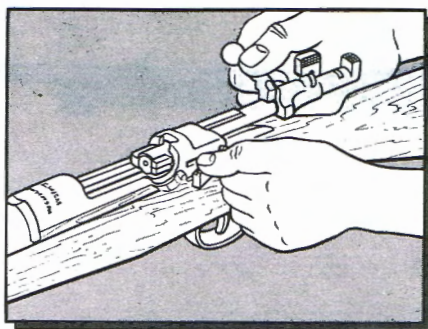
Besides the Model 1894 carbine and 1896 infantry rifle, there is the Model 1938 short rifle and 1941 sniper's rifle. All models are mechanically alike and adapted to the 6.5x55 cartridge.



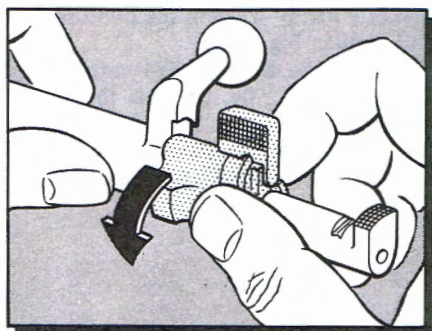
## Parts Legend

1. Bolt with extractor collar
2. Extractor
3. Firing pin
4. Firing pin spring
5. Bolt sleeve
6. Cocking piece
7. Safety
8. Handguard
9. Stock
10. Handguard band
11. Cleaning rod
12. Lower band
13. Upper band
14. Barrel and receiver
15. Bolt stop
16. Ejector
17. Bolt stop screw
18. Bolt stop and ejector spring
19. Follower
20. Magazine spring
21. Trigger guard
22. Front guard screw
23. Floorplate
24. Floorplate catch
25. Catch spring
26. Rear guard screw
27. Trigger
28. Sear
29. Trigger pin
30. Sear pin
31. Sear spring
32. Assembled bolt

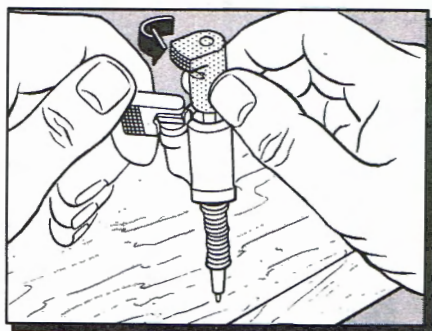




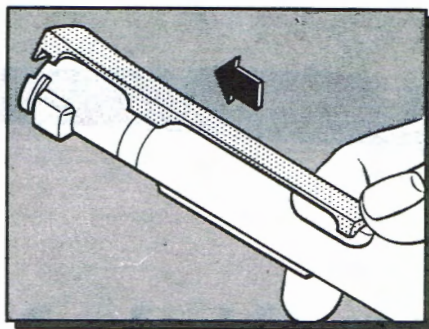
**1** After checking to make sure that chamber and magazine are unloaded, cock rifle by rotating bolt to open position, pulling back several inches, and then closing it. Turn safety (7) to vertical middle position, pull outward on bolt stop (15) with thumb, and remove bolt from receiver. In replacing bolt, it is unnecessary to pull out bolt stop, which will be automatically forced aside as bolt is pushed into receiver. Follower (19) must be pushed down to allow bolt to go forward



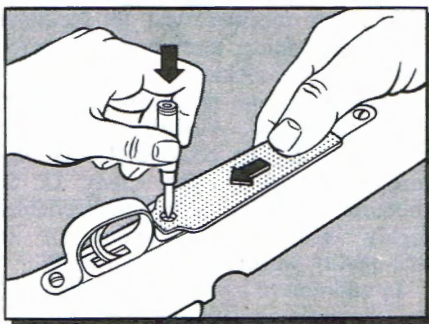
**2** With safety in middle position, grasp bolt sleeve (5) and unscrew firing mechanism from bolt



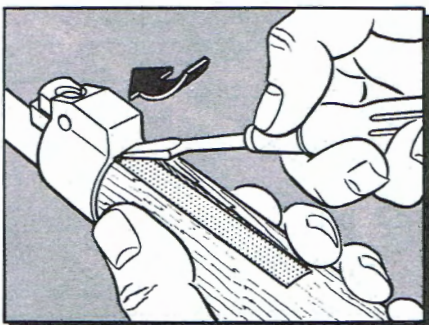
**3** Rest firing pin point against a wooden block. Grasp bolt sleeve and safety (7) tightly, and push down on safety with thumb until cocking piece (6) is clear of bolt sleeve. Rotate cocking piece a quarter turn in either direction, and lift it off firing pin (3). Slowly allow firing pin spring (4) to expand and remove bolt sleeve and firing pin spring from firing pin. Turn safety all the way to the right, and remove it from bolt sleeve



**4** Rotate extractor (2) until its tongue runs out of the extractor groove on bolt head. Push extractor forward with thumb to free it from extractor collar on bolt. Do not remove extractor collar. To replace extractor, engage undercuts on its lower surface with lugs of extractor collar. Push extractor to rear, lift its tongue over front edge of bolt, and rotate extractor until tongue is in extractor groove on bolt



**5** To disassemble magazine, use a cartridge nose to depress floorplate catch (24), and at the same time push floorplate (23) rearward until disengaged from undercuts in trigger guard. Lift floorplate with attached magazine spring and follower out of trigger guard, and slide magazine spring out of undercuts on floorplate and follower. In reassembly, first engage narrow end of magazine spring in undercuts of follower



**6** To remove stock and handguard, it is necessary to remove the lower band (12) and upper band (13). Use a screwdriver to depress band-retaining springs, and push bands forward. Cleaning rod (11) must be unscrewed and removed before attempting to depress upper band spring. Raise rear sight leaf to vertical position, and lift off handguard (8). Unscrew front and rear guard screws (22 and 26), and separate barrel and receiver (14) and trigger guard (21) from stock ■

## A Man to Remember

### PATRICK FERGUSON

*Invented a practical breech-loading flintlock rifle in 1776*

Born—1744

Died—Oct. 7, 1780



**B**ORN at Pitfour, Scotland, from a very early age this son of a Scottish jurist showed an interest and aptitude for military life. When only 19 he obtained a commission in the Royal North British Dragoons and soon distinguished himself in home service with the Scottish militia and with the expeditionary forces against the Caribs in the West Indies.

A firearms enthusiast and an excellent marksman, Ferguson developed an improved breech-loading rifle before he was 22. He was granted a patent on his gun in 1776 before a commission of the Master General of the Ordnance. This new rifle was characterized by a vertical breech plug which could be lowered with one revolution of the trigger guard, thus opening a hole in the top of the barrel through which the gun could be loaded. Simple, swift, and accurate, the new gun was years ahead of its time. Still, Ferguson was able to persuade the government to equip at least one company of light infantry with it. Thus it became the first breech-loader used by organized troops in any country.

Ferguson's service in the American Revolution was brief and tragic. He came to America with his riflemen as part of the 2nd Battalion, 71st Regt. (Frazier's Highlanders), in 1777. On Sept. 11 of that year he led them in action at the Battle of Brandywine. There his right elbow was shattered, leaving that arm practically useless. Undaunted, Ferguson taught himself to write, fence, and shoot left-handed and returned to combat command. He led troops in action at Stony Point and Little Egg Harbor. Then he was made a brevet lieutenant colonel and sent with Sir Henry Clinton's expedition against the southern states. There, at the battle of Kings Mountain, an American rifle ball ended his life at the age of 36.—HAROLD L. PETERSON





# MARLIN MODEL 39-A

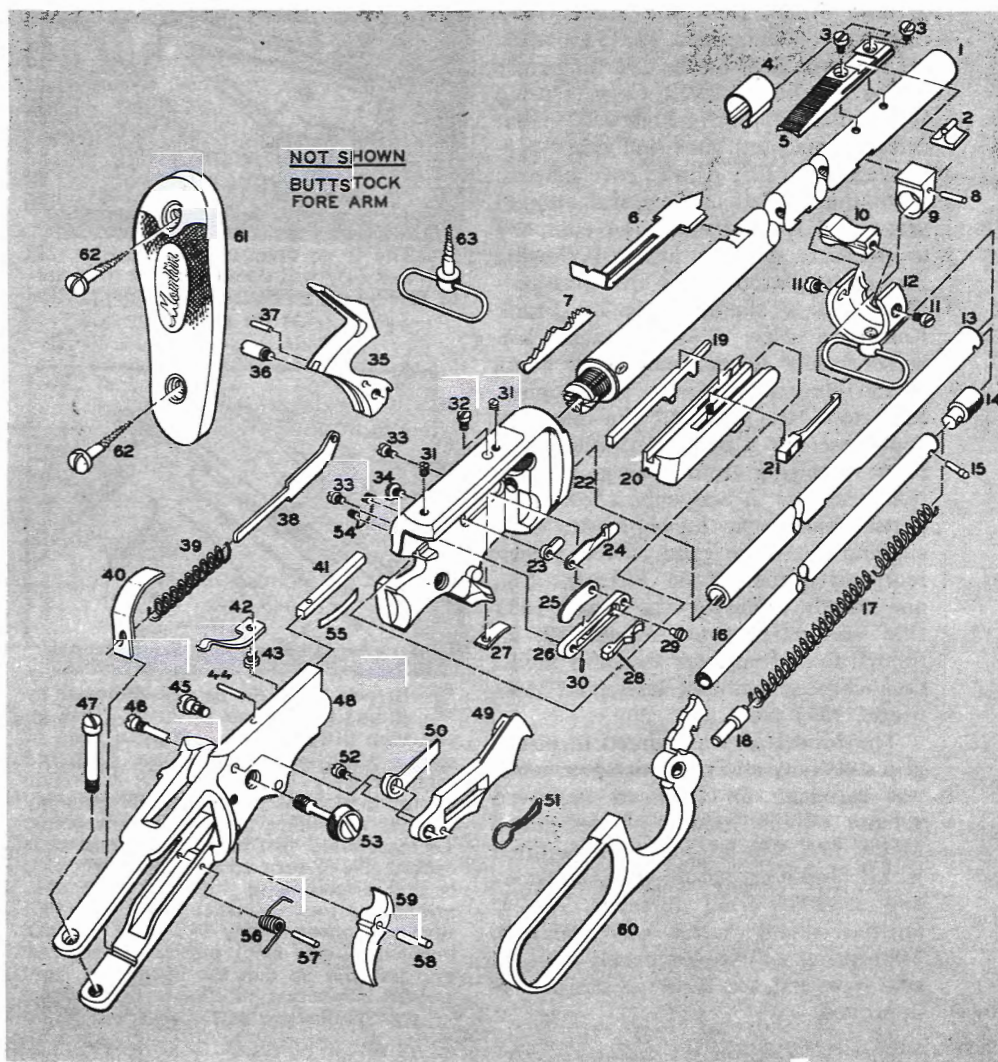
By Thomas E. Wessel

IN December of 1890 the Marlin Fire Arms Co., of New Haven, Conn., announced production of their first cal. .22 rimfire side-ejection, lever-action, tubular magazine repeating rifle, designated Model 1891. This rifle had a solid frame and was offered with short or long magazines, the former holding 10 short or 7 long rifle cartridges, and the latter holding 19 short or 14 long rifle cartridges. The cartridges were loaded into the magazine through a spring cover on the right side of the receiver. The receiver side-plate was detachable to facilitate inspection and cleaning of the bore from the breech end.

Shortly after its introduction, the Model 1891 was modified so that it could be loaded through the front end

## Parts Legend

1. Barrel
2. Front sight insert
3. Front sight ramp screw (2)
4. Front sight ramp hood
5. Front sight ramp
6. Rear sight
7. Rear sight elevator
8. Magazine tube band pin
9. Magazine tube band
10. Forearm tip tenon
11. Forearm tip tenon screw (2)
12. Forearm tip with swivel
13. Magazine tube, outside
14. Magazine tube plug
15. Magazine tube plug pin
16. Magazine tube, inside
17. Magazine tube spring
18. Magazine tube follower
19. Firing pin
20. Breech bolt
21. Extractor
22. Receiver, left side
23. Cartridge cutoff spacer
24. Cartridge cutoff
25. Ejector spring
26. Ejector base
27. Cartridge guide spring
28. Ejector
- \*29. Ejector lock rivet
30. Ejector pin
31. Adapter base dummy screw (2)
32. Cartridge guide spring screw
33. Ejector base screw (2)
34. Cartridge cutoff screw
35. Hammer
36. Hammer screw
37. Hammer rod pin
38. Hammer rod
39. Mainspring
40. Mainspring adjusting plate
41. Cartridge stop
42. Finger lever spring
43. Finger lever spring screw
44. Cartridge stop pin
45. Finger lever screw
46. Carrier screw
47. Tang screw
48. Receiver, right side
49. Carrier
50. Carrier rocker
51. Carrier rocker spring
52. Carrier rocker screw
53. Thumbscrew
54. Receiver peep sight dummy screw (2)
55. Cartridge stop spring
56. Trigger spring
57. Trigger spring pin
58. Trigger pin
59. Trigger
60. Finger lever
61. Buttplate
62. Buttplate screw (2)
63. Rear swivel



\* Permanent sub-assembly of ejector base (26)



of the magazine tube and the magazine was increased in length to hold 25 short, 20 long, or 18 long rifle cartridges. Optional barrel lengths were 24", 25", and 26" in round, half-octagon, or full-octagon styles.

The Model 1891 rifle was also offered in cal. .32, convertible for either center-fire or rimfire cartridges by substitution of firing pins.

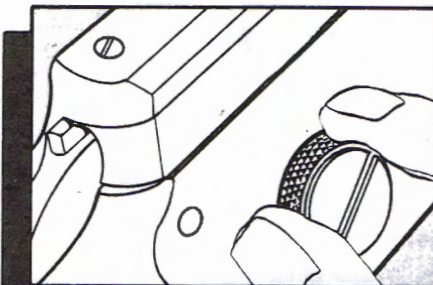
The cal. .22 Model 1891 rifle was replaced by the Model 1892 which was also of solid-frame construction. Mechanical differences between the 2 models were minor. Sear and trigger of the Model 1892 were integral, and not separate as in the Model 1891. There were additional changes in the firing pin, breech bolt, and trigger spring. Standard barrel length for the Model 1892 was 24" but longer barrels could be furnished at extra cost. Barrels were round, half-octagon, and full-octagon.

A takedown version, designated Model 1897, was introduced in that year. It was otherwise made to the same general specifications as the Model 1892 and was available in regular and deluxe grades. A special 16"-barrel 'bicycle model' with reduced capacity magazine was also offered. Production of both Model 1892 and Model 1897 rifles was discontinued in 1915 when the firm was sold by the Marlin family to the Marlin-Rockwell Corp. During World War I Marlin-Rockwell manufactured machine guns and other ordnance items for Allied governments. After the war an unsuccessful attempt was made to reorganize the company to produce sporting arms. Following bankruptcy, assets of the firm were purchased at a sheriff's sale by Frank Kenna, a New Haven industrialist. Some former Marlin employees living in the New Haven area subsequently came to Kenna and told him that they could assemble a great many rifles from parts remaining from pre-war production, and that at best only a few small parts would have to be made. Considering this to be good advice, Kenna reorganized the Marlin Firearms Co., and shortly thereafter the Model 1897 rifle was redesignated Model 39, although the initial rifles with this model number were actually assembled from Model 1897 parts.

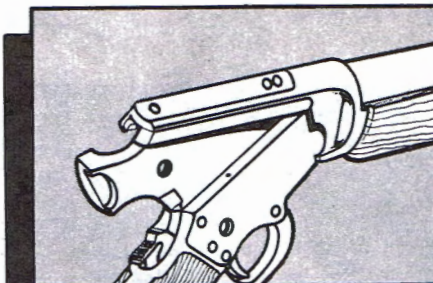
The Model 39 was offered in pistol-grip style only and a 24" octagon barrel was standard. In 1939 an improved version of the Model 39, designated Model 39A, was introduced. It featured a shotgun-type pistol-grip buttstock and semi-beavertail forearm. A 24" tapered round barrel was standard. Mainspring and trigger spring were of coil type and the hammer design was improved.

In 1954 a 20" carbine version known as the 39-A Mountie was introduced. This model has a straight-grip stock and a reduced magazine capacity of 20 short, 15 long, or 14 long rifle cartridges.

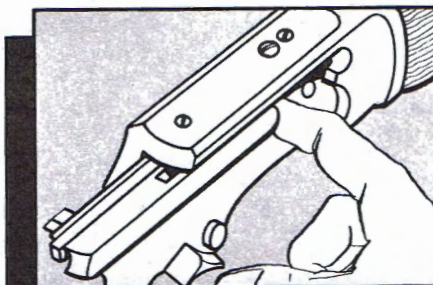
The Golden Model 39-A with gold-plated trigger was introduced in 1957. In 1960, chrome-plated, carved-stock presentation versions of the regular Model 39-A rifle and 39-A Mountie were placed in limited production.



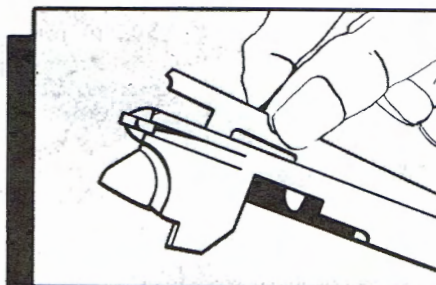
**1** To disassemble Marlin 39-A, first close action, then manually cock hammer (35) and unscrew thumbscrew (53)



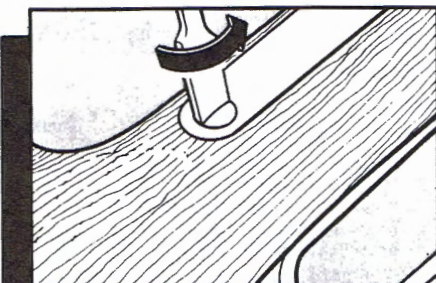
**2** The 2 portions of the receiver (22) and (48) will come apart at the joints by forcing the buttstock (right side) portion to the right



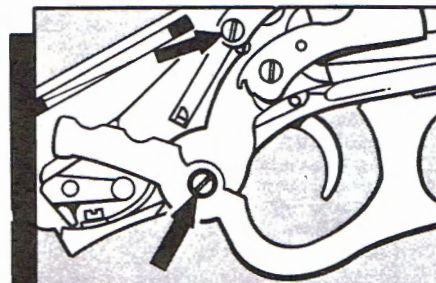
**3** Breech bolt (20) can be removed by sliding it rearward as far as it will go and then lifting it away. Depress wing of ejector (28) into ejector base (26) and rotate ejector lock rivet (29) to retain ejector in depressed position. Disassembly thus far will suffice for cleaning and oiling. To reassemble, first insure that hammer is cocked. Next, turn ejector lock rivet (29) to free ejector wing, replace breech bolt, and slide it forward. Open finger lever (60) slightly (approximately 1/8" to 1/4"), place buttstock (right side) portion of receiver into left side so that the lip on the front end fits into recess in left side. Screw down the thumbscrew as far as it will go



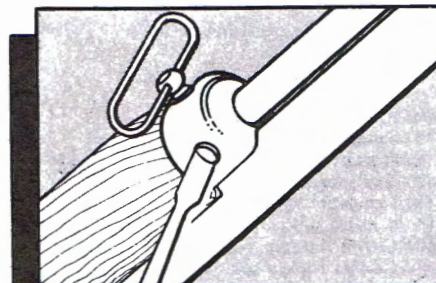
**4** Further disassembly is accomplished by removing the firing pin (19), which simply may be lifted away from the bolt



**5** To remove the buttstock, unscrew the tang screw (47) and lift the stock away to the rear

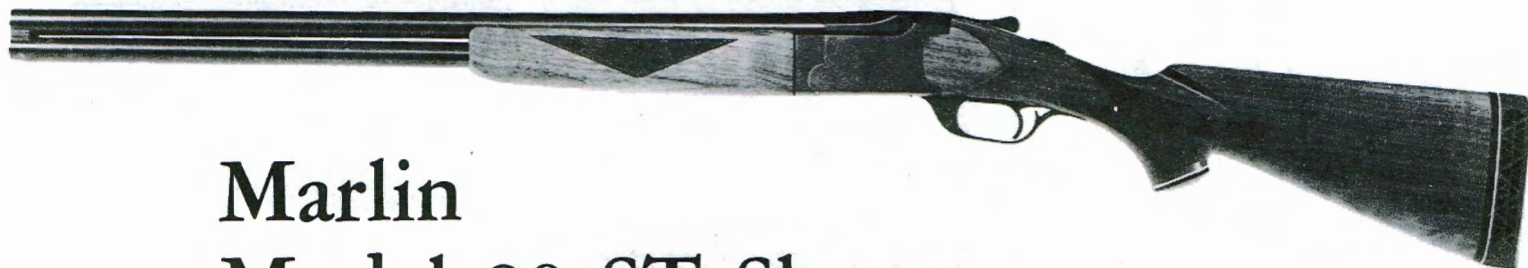


**6** Next, unscrew finger lever screw (45—lower arrow) and lift away finger lever. Following that, unscrew carrier screw (46—upper arrow) and lift out carrier (49)



**7** The forearm may be removed by unscrewing the 2 forearm tip tenon screws (11) and sliding forearm tip (12) forward. The forearm may now be lifted away. Reassemble in reverse order





# Marlin Model 90 ST Shotgun

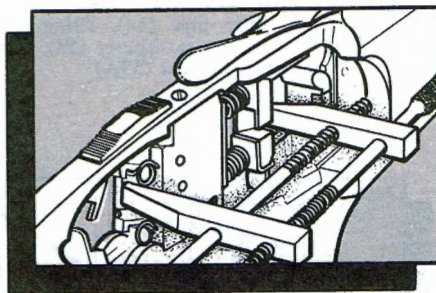
By Thomas E. Wessel

**I**N 1937, Marlin Firearms Co., New Haven, Conn., began production of the Model 90 double trigger over-under shotgun, noteworthy for its clean, simple design and moderate price. Early production guns had a low fore-end iron which did not rise up even with front of frame side members as in later guns. Pre-war production was in 12-ga. on a large frame, with somewhat smaller frame used on 16- and 20-ga. models. A small quantity of .410-bore Model 90's were made up on a miniature frame. Also made were a few rifle-shotgun combinations in .30 Winchester-20-ga., and also .410-bore combinations with rifle barrel chambered for .22 rimfire, .22 Hornet, or .218 Bee. Special hardened recoil plates were fitted to standing breeches for center-fire rifle cartridges and small-diameter firing pins were installed to prevent puncturing of primers.

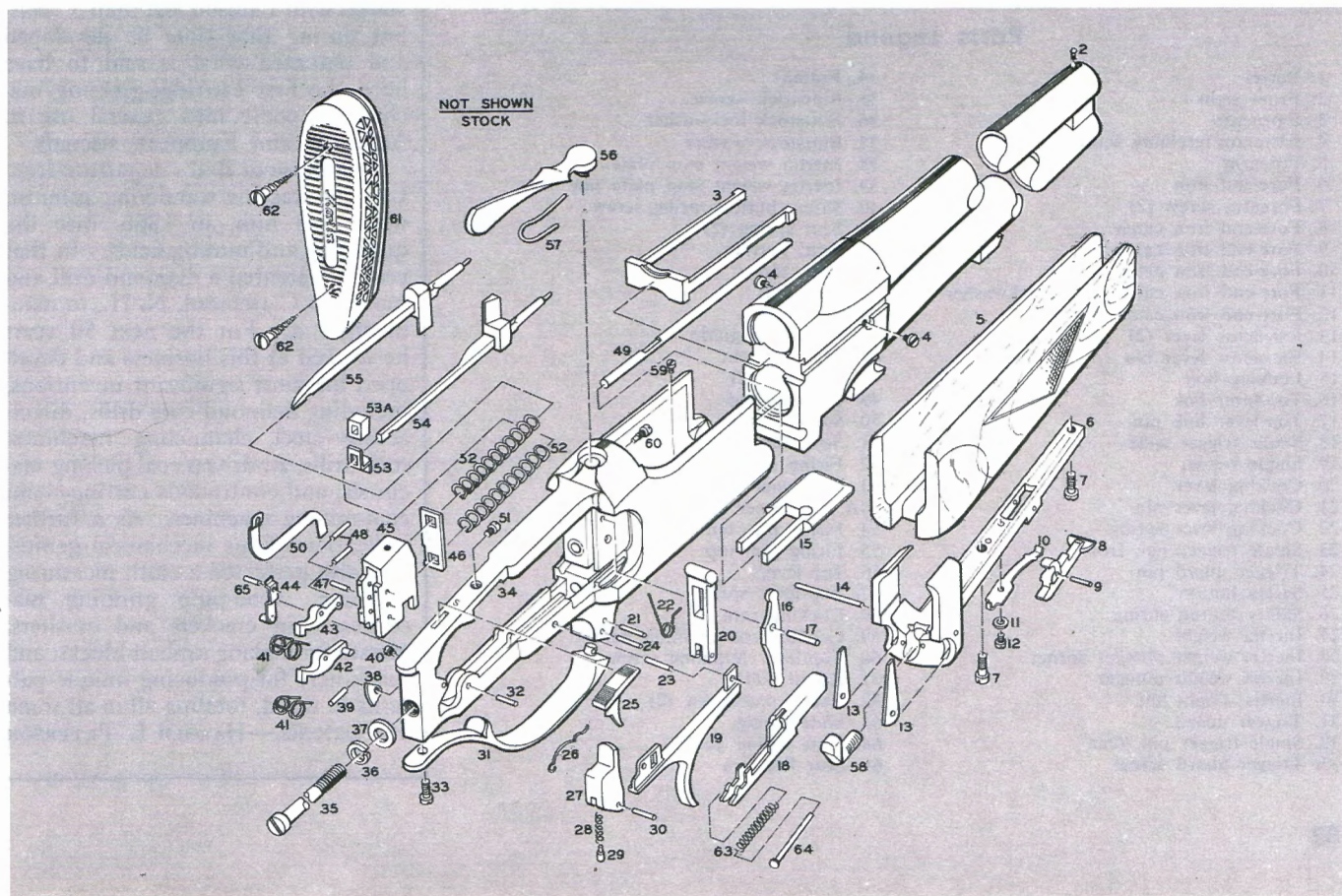
In 1951 the fore-end iron assembly

was modified by installation of a pull-down pivoted catch in lieu of the flat spring catch used on previous guns.

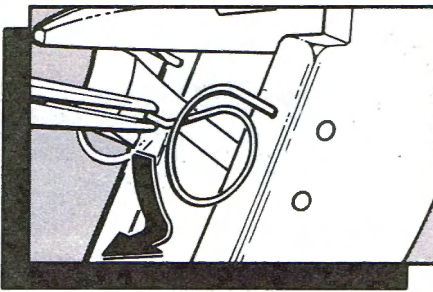
In 1954 a version was introduced with non-selective single trigger which fired the lower barrel (more open bore) first. Designated Model 90 ST, it had an anti-doubling mechanism operated by an inertia weight. In event of a recoil-induced involuntary trigger release and involuntary second pull after firing the first barrel, counter recoil moves the entire gun with reference to the inertia weight so that it swings under the inertia stop in the frame. At the same time the sear slide moves forward in position to engage the upper sear, thus losing contact with the lower sear. If the trigger is involuntarily pulled at this time, trigger motion is blocked by the inertia weight so that a deliberate release and second pull of the trigger is necessary to fire the upper barrel. The Model 90 ST was discontinued in 1960.



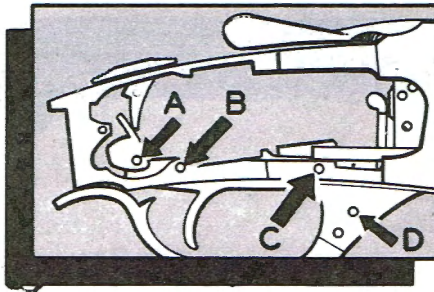
**1** To disassemble Model 90 ST, first cock the arm to compress firing pin springs (52), set safety button (25) to 'S' (Safe), and remove forearm (5) and barrel (1). Next, remove recoil pad screws (62) and recoil pad (61). Using a long-shanked screwdriver, remove buttstock screw (35), buttstock washer (37), and buttstock lockwasher (36). Pull stock away from frame (34). Place a felt-padded machinists clamp between cocking arms on the firing pins (54 and 55) and rear surface of sear box (45). Remove sear box screw (51) and lift away entire sear box assembly to right



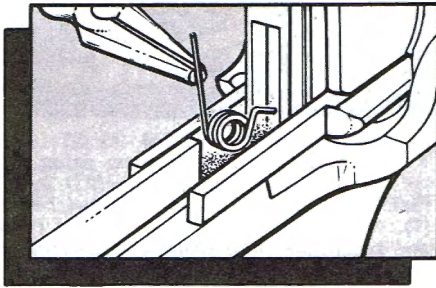




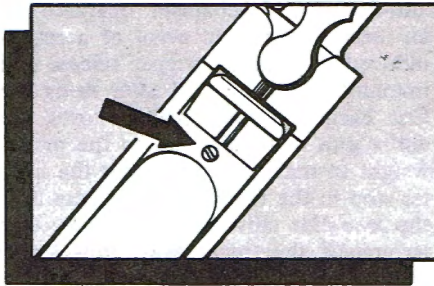
**2** Manually trip sears (42 and 43) and slowly open clamp to release tension on firing pin springs. Using long-nosed pliers, carefully 'unhook' sear springs (41) from rear notch of each sear and lift springs away. Drift out sear pins (48) and remove sears, sear link (44), firing pin guide (46), firing pins, positioner (53), and positioner spacer (53A)



**3** Remove safety button spring screw (40) and lift away safety button spring (26) and safety button rod (50). Next, (A) drift out inertia weight pin (30) and remove inertia weight (27), inertia weight plunger spring (28), and inertia weight plunger (29), being careful not to lose the latter 2 parts. Then (B and C) drift out single trigger pin, rear (32), and single trigger pin, front (23). Remove single trigger slide (18) and single trigger (19). (D) Drift out cocking lever pin (21)



**4** Using long-nosed pliers, remove cocking lever spring (22) and cocking lever (20). Drift out top-lever link pin (17), remove top-lever link (16) and withdraw locking bolt (15) from front of frame



**5** Remove cocking rod retaining screw (59) (arrow) and withdraw cocking rod (49). Reassemble Model 90 ST in reverse order

### Parts Legend

- |  |                                   |
|--|-----------------------------------|
| 1. Barrel                                | 34. Frame                         |
| 2. Front sight                           | 35. Buttstock screw               |
| 3. Extractor                             | 36. Buttstock lockwasher          |
| 4. Extractor retaining screw (2)         | 37. Buttstock washer              |
| 5. Forearm                               | 38. Inertia weight stop plate     |
| 6. Fore-end iron                         | 39. Inertia weight stop plate pin |
| 7. Forearm screw (2)                     | 40. Safety button spring screw    |
| 8. Fore-end iron catch                   | 41. Sear spring (2)               |
| 9. Fore-end iron catch pin               | 42. Sear, bottom                  |
| 10. Fore-end iron catch spring           | 43. Sear, top                     |
| 11. Fore-end iron catch screw lockwasher | 44. Sear link                     |
| 12. Fore-end iron catch screw            | 45. Sear box                      |
| 13. Extractor lever (2)                  | 46. Firing pin guide              |
| 14. Extractor lever pin                  | 47. Sear box pin                  |
| 15. Locking bolt                         | 48. Sear pin (2)                  |
| 16. Top-lever link                       | 49. Cocking rod                   |
| 17. Top-lever link pin                   | 50. Safety button rod             |
| 18. Single trigger slide                 | 51. Sear box screw                |
| 19. Single trigger                       | 52. Firing pin spring (2)         |
| 20. Cocking lever                        | 53. Positioner                    |
| 21. Cocking lever pin                    | 53A. Positioner spacer            |
| 22. Cocking lever spring                 | 54. Firing pin, bottom            |
| 23. Single trigger pin, front            | 55. Firing pin, top               |
| 24. Trigger guard pin                    | 56. Top-lever                     |
| 25. Safety button                        | 57. Top-lever spring              |
| 26. Safety button spring                 | 58. Cocking cam                   |
| 27. Inertia weight                       | 59. Cocking rod retaining screw   |
| 28. Inertia weight plunger spring        | 60. Top-lever retaining screw     |
| 29. Inertia weight plunger               | 61. Recoil pad                    |
| 30. Inertia weight pin                   | 62. Recoil pad screw (2)          |
| 31. Trigger guard                        | 63. Slide spring                  |
| 32. Single trigger pin, rear             | 64. Slide spring guide            |
| 33. Trigger guard screw                  | 65. Sear link pin                 |

## A MAN TO REMEMBER

ALBERT BALL

*Invented the Ball carbine and a cartridge-greasing machine*

Born—Boylston, Mass., May 7, 1835

Died—Claremont, N. H., Feb. 7, 1927

ALBERT BALL was a mechanical genius with a great diversity of interests. After completing one term of high school, he began an apprenticeship in the machinist's trade in Worcester, Mass., putting in time with several companies in that city. At the last of these, L. W. Pond, he was placed in charge of manufacturing planers. While there he perfected a machine for polishing flat surfaces and invented, in 1864, a combined repeating and single-loading rifle.

It was the invention of the rifle that brought Ball into the armsmaking field. E. G. Lamson, of Windsor, Vt., promptly bought the patent and persuaded Ball to become superintendent of his gun factory. Ball stayed with Lamson less than 5 years, but during that time he developed and patented what is said to have been the first cartridge-greasing machine to come into general use in American and European arsenals.

The cause of Ball's departure from Lamson was his wandering interest, which led him, in 1868, into the quarrying and mining fields. In that year he patented a diamond drill and moved to Claremont, N. H., to manufacture it. For the next 50 years he worked at this business and developed his most significant inventions, including diamond core drills, direct-acting steel channeling machines, rock drills, air-driven coal picking machines, and continuous cutting-chain coal-mining machines. As a further indication of his mechanical genius, Ball also perfected a cloth measuring machine, wood-pulp grinding machines, corn crackers and crushers, presses for making asphalt blocks, and machinery for producing unique patterns in wood, totaling all-in-all some 135 patents.—HAROLD L. PETERSON



It was in 1889, or well over half a century ago, that the Marlin Firearms Company introduced the first successful side-ejection tubular-magazine lever-action rifle with solid receiver. The basic design has been improved several times through the years, with the last significant change made in 1948 with the introduction of the Model 336

series of rifles and carbines. Of major interest is that all guns of this modern series have round barrels and a round breech bolt of alloy steel. This in contrast with the 'square' breech bolt of previous Marlin lever-action rifles.

The fact that the Model 336 ejects spent cartridges to the side rather than out the top of the receiver is of importance to the shooter who wants to mount a scope sight directly over the bore of his rifle. This is not feasible with top-ejection arms, which must be fitted with a relatively awkward offset side

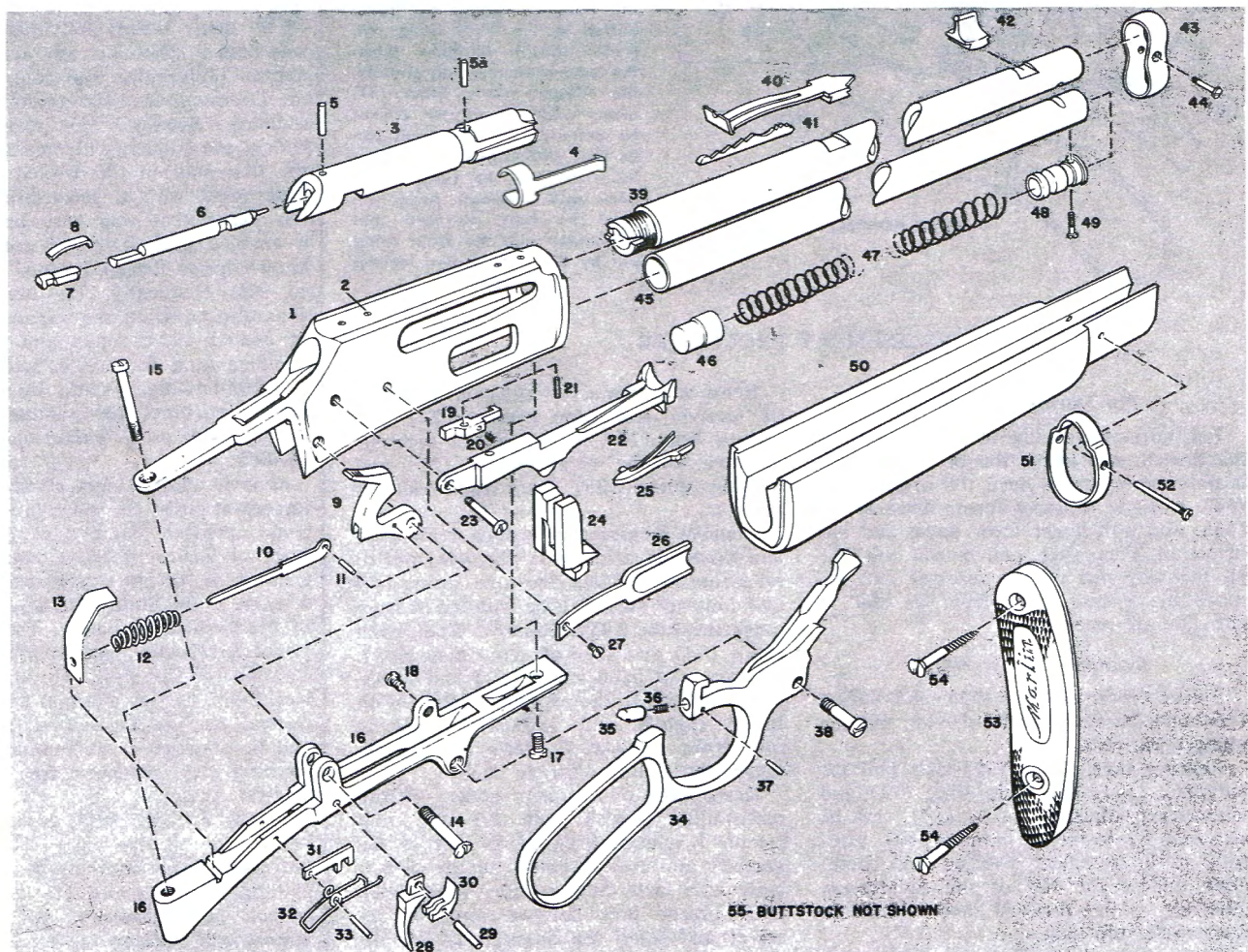
mount if a telescope sight is desired.

The Model 336 is available in a variety of calibers including .219 Zipper, .30-30, .32 Special, and .35 Remington. The carbine versions feature 20-inch barrels and the rifles are offered with 24-inch barrels. With the exception of the straight-grip "Texan" carbine in .30-30 or .35 Remington caliber, all offerings in the 336 line have pistol grip buttstocks. Checkering on pistol grip and forearm plus detachable shooting sling are features of the deluxe grade carbine and rifle.



By James M. Triggs

## MARLIN MODEL 336



- |  |                                       |                                 |                              |
|--|---------------------------------------|---------------------------------|------------------------------|
| 1. Receiver                                | 14. Hammer screw                      | 28. Trigger                     | 42. Front sight              |
| 2. Receiver dummy screws (6)               | 15. Tang screw                        | 29. Trigger pin                 | 43. Front band               |
| 3. Breech bolt                             | 16. Trigger guard plate               | 30. Sear                        | 44. Front band screw         |
| 4. Extractor                               | 17. Trigger guard plate screw         | 31. Trigger safety block        | 45. Magazine tube            |
| 5. Rear firing pin retaining pin (long)    | 18. Trigger guard plate support screw | 32. Trigger safety block spring | 46. Magazine tube follower   |
| 5a. Front firing pin retaining pin (short) | 19. Carrier rocker                    | 33. Trigger safety block pin    | 47. Magazine tube spring     |
| 6. Front firing pin                        | 20. Carrier rocker spring             | 34. Finger lever                | 48. Magazine tube plug       |
| 7. Rear firing pin                         | 21. Carrier rocker rivet              | 35. Finger lever plunger        | 49. Magazine tube plug screw |
| 8. Firing pin spring                       | 22. Carrier                           | 36. Finger lever plunger spring | 50. Forearm                  |
| 9. Hammer                                  | 23. Carrier screw                     | 37. Finger lever plunger pin    | 51. Rear band                |
| 10. Hammer rod                             | 24. Locking bolt                      | 38. Finger lever screw          | 52. Rear band screw          |
| 11. Hammer rod pin                         | 25. Ejector and ejector spring        | 39. Barrel                      | 53. Buttplate                |
| 12. Mainspring                             | 26. Loading spring                    | 40. Rear sight                  | 54. Buttplate screws (2)     |
| 13. Mainspring adjusting plate             | 27. Loading spring screw              | 41. Rear sight elevator         | 55. Buttstock (not shown)    |



# A MAN TO REMEMBER

WILLIAM HENRY

*Riflemaker, inventor,  
and patriot*

Born—West Caln Township, Pa.,

May 19, 1729

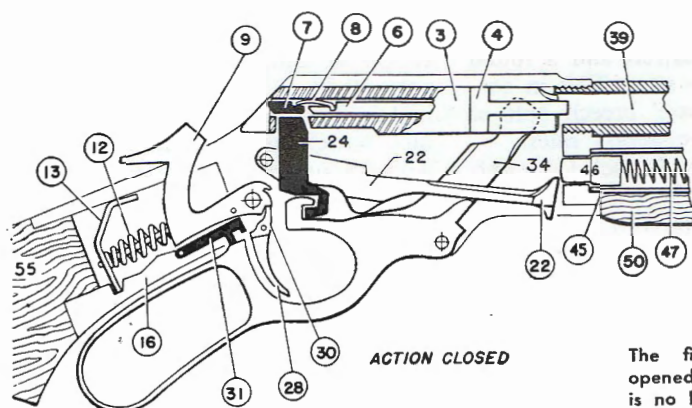
Died—Lancaster, Pa.,

Dec. 15, 1786

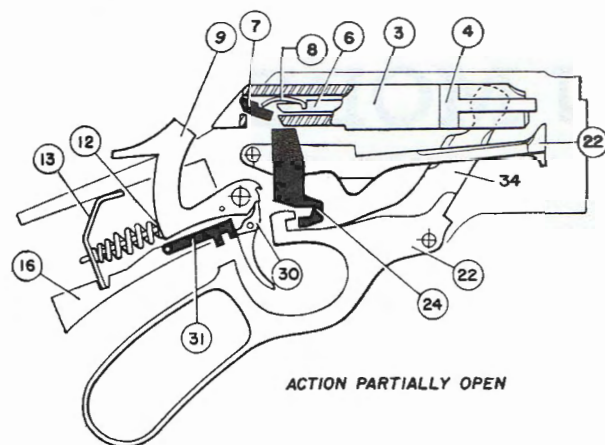
WILLIAM HENRY was a man of many talents and interests. He was both a riflemaker and a student of natural philosophy who contributed to the *Transactions* of the American Philosophical Society. He experimented widely, particularly with steam, and was the first man in the United States to experiment with a steam-driven boat. His experiment was unsuccessful, but it enabled him to impart considerable knowledge to Robert Fulton, who visited him frequently. He invented an apparatus utilizing the expansive force of heated air to open and close the dampers in a furnace, a screw auger, a steam-heating system, many labor-saving machines for gunmaking, and was at work on a 'steam wheel' when he died.

In civic affairs Henry also held many important posts. He was a justice of the peace, assistant Burgess of Lancaster, assistant justice of the County courts, member of the State canal commission, delegate to the State Assembly, member of the Council of Safety, Treasurer of Lancaster County, and member of the Continental Congress. Throughout the Revolution he was assistant commissary general for the District of Lancaster, and he supervised the manufacture of clothing and ordnance for the Continental Army.

In the firearms field, Henry is best known for his fine rifles. He learned the trade from Mathew Roesser, beginning at the age of 15. In 1750 he formed a partnership with Joseph Simon, and because the quality of his work created considerable demand, he slowly acquired a comfortable fortune. From 1755 to 1760 he served as the principal armorer for the Pennsylvania troops called up for the French and Indian War. Upon his return from service he bought out his partner and conducted the business alone until joined by his sons. In addition to his rifles he expanded his operation during the Revolution to include musket and bayonet manufacture and the repair of arms.—HAROLD L. PETERSON



The proper relationship of all parts within the receiver with the action closed, cocked, and properly locked



The finger lever has been opened slightly and the action is no longer locked. Note that when the locking bolt (24) is not in full engagement with the breech bolt (3), due to the finger lever being partially or fully opened, the rear and front firing pins (7 and 6) are not in alignment and a blow of the hammer cannot be transmitted to the front firing pin. Note that, in addition, when the lever is opened only slightly, the trigger safety block (31) drops and the trigger cannot be pulled. Before the gun can be fired, the trigger block must be raised by the fully closed lever and the rear firing pin must be fully elevated into alignment with the front firing pin by the fully seated locking bolt

## DISASSEMBLY PROCEDURE

### For Normal Cleaning

For normal cleaning of the bore from the breech, and inspection of the bore, it is only necessary to open the finger lever (34) halfway, remove finger lever screw (38), and pull finger lever down and out of action. Thereafter, pull breech bolt (3) all the way out of the receiver and remove the ejector (25) from its slot in left side of receiver.

### Complete Disassembly

Finger lever plunger (35) and spring (36) may be removed by driving out the plunger pin (37).

Remove tang screw (15) and pull off buttstock (55). The mainspring (12) and mainspring adjusting plate (13) can be removed by lowering hammer (9) carefully to its foremost position and thereafter tipping the top of the mainspring adjusting plate forward and sideways from under top tang.

Remove the hammer screw (14) and, pressing trigger slightly, remove the hammer (9) upward. Drive out hammer rod pin (11) and remove hammer rod (10).

Remove the trigger guard plate screw (17) and the trigger guard plate support screw (18). Drop trigger guard plate (16) out bottom of receiver. Trigger (28) and sear (30) may be removed from the trigger guard plate by driving out the trigger pin (29). The trigger safety block (31) and spring (32) may be removed by driving out the trigger safety block pin (33).

Remove carrier screw (23) on right side of receiver and drop carrier (22) and locking bolt (24) out bottom of receiver. Remove loading spring screw (27) and loading spring (26) from right side of receiver.

Remove magazine tube plug screw (49) and draw magazine tube plug (48) out of magazine tube. Magazine tube spring (47) and follower (46) may be withdrawn from magazine tube (45). Remove front band screw (44) and slide off front band (43). Remove rear band screw (52) and loosen rear band (51). Slide forearm (50) up on barrel slightly and withdraw magazine tube from receiver. Forearm may be removed by sliding off rear band.

Reassemble in reverse order. Before re-installing breech bolt, be sure that ejector is placed back in its slot in the receiver and that the stud on the ejector is in place in its hole in the receiver wall. Slide breech bolt halfway into the receiver and insert the finger lever into its slot in the trigger guard plate so that its upper end engages the slot in the breech bolt.

If stripping of the breech bolt (3) is necessary, front and rear firing pins (6 and 7) and firing pin spring (8) may be removed by driving out the front firing pin retaining pin (short) (5a) and rear firing pin retaining pin (long) (5). The extractor (4) may be pried gently from its slot with a small screwdriver. Care should be taken not to mar the breech bolt or to bend the extractor excessively in this operation.





# 1891 MOSIN-NAGANT RIFLE

By E. J. Hoffschmidt

**I**N spite of its age, this turnbolt military rifle is still in use in Russia and her satellites. It has outlived at least three Russian semiautomatic rifles.

Adopted in 1891 by the Imperial Russian Army, the Mosin-Nagant was Russia's first modern smokeless powder rifle. It was designed by Colonel Serge I. Mosin of the Imperial Russian Army in collaboration with Emile Nagant, famous Belgian arms designer and manufacturer. It might be pointed out that Mosin's name is also encountered in

arms literature as Mossin, Mouzin, Moisin, Mossine, etc., depending upon nationality of the writer. The term "3-line" often used in describing this rifle indicates the nominal caliber of .300 inch, based upon a Russian unit of measurement equal to .1 inch.

Mosin-Nagant rifles have been manufactured in Russia, Switzerland, France, and in the U. S. by Remington Arms Co. and New England Westinghouse.

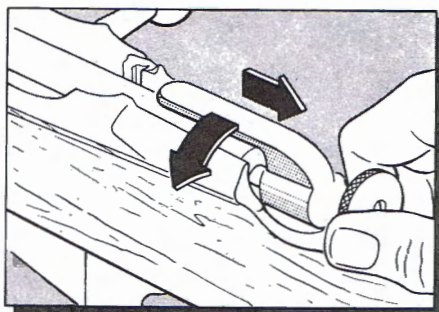
The U. S.-made Mosin rifles were better finished than those of present-day Soviet manufacture. The Director of Civilian Marksmanship disposed of a quantity of these rifles to NRA mem-

bers after World War I.

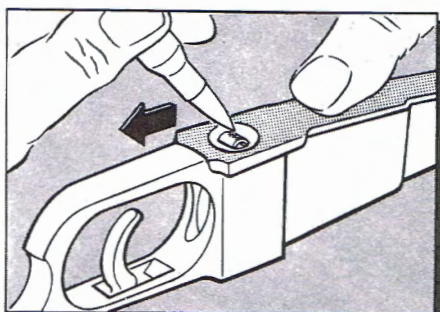
Original Model 1891 rifles had octagon-shaped receivers whereas subsequent versions have round receivers. Numerous models exist, including both carbines and rifles. (Specimen in photo is Model 1891/30.) Telescope-sighted rifles were furnished for use by snipers.

This rifle is not too suitable for conversion to sporting type because of the split receiver bridge which complicates the mounting of receiver and scope sights. From a design standpoint, the bolt handle is too far forward and the safety mechanism is stiff and awkward to operate.

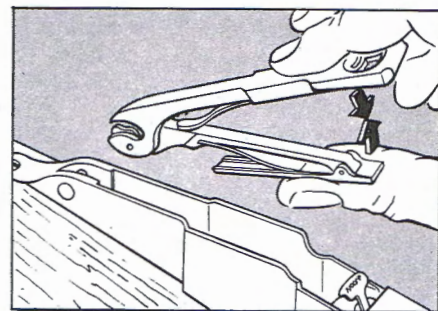
E. J. HOFFSCHMIDT is an artist-illustrator.



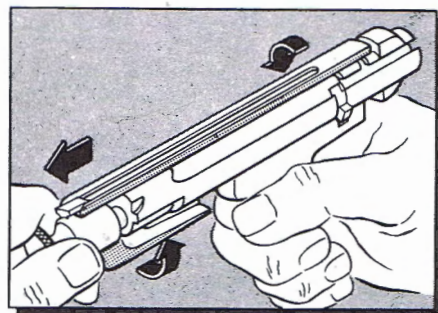
**1** To apply safety catch, pull back cocking piece (1) far enough to allow it to be rotated as shown, over back edge of receiver



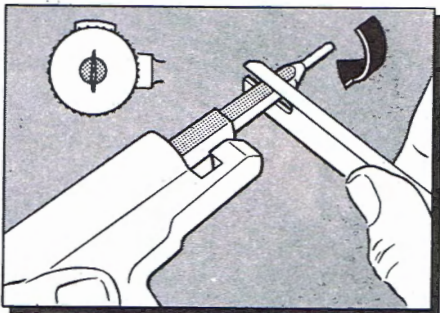
**2** This rifle has a simple magazine floorplate release. Using a cartridge or finger, pull back floorplate latch (30). Then swing magazine floorplate (29) open



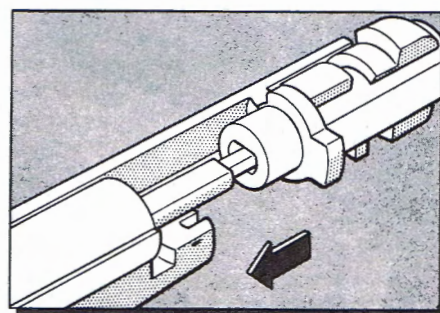
**3** To remove magazine floorplate (29) and magazine follower (24), squeeze floorplate and follower together as shown. This will open hinge at end of floorplate and allow it to be pulled free of hinge pin riveted through magazine



**4** To strip bolt (8), grasp as shown. Pull back cocking piece (1) far enough to disengage it from end of bolt. Rotate it as shown, allowing it to go forward. Now slide bolt head (6) and bolt connector and guide bar (5) off bolt body (2)



**5** Since firing pin (4) is screwed into cocking piece (1), they sometimes bind. End of bolt connector and guide bar (5) can be used as a wrench to screw out firing pin (4). When reassembling bolt, be sure marks on firing pin and cocking piece line up



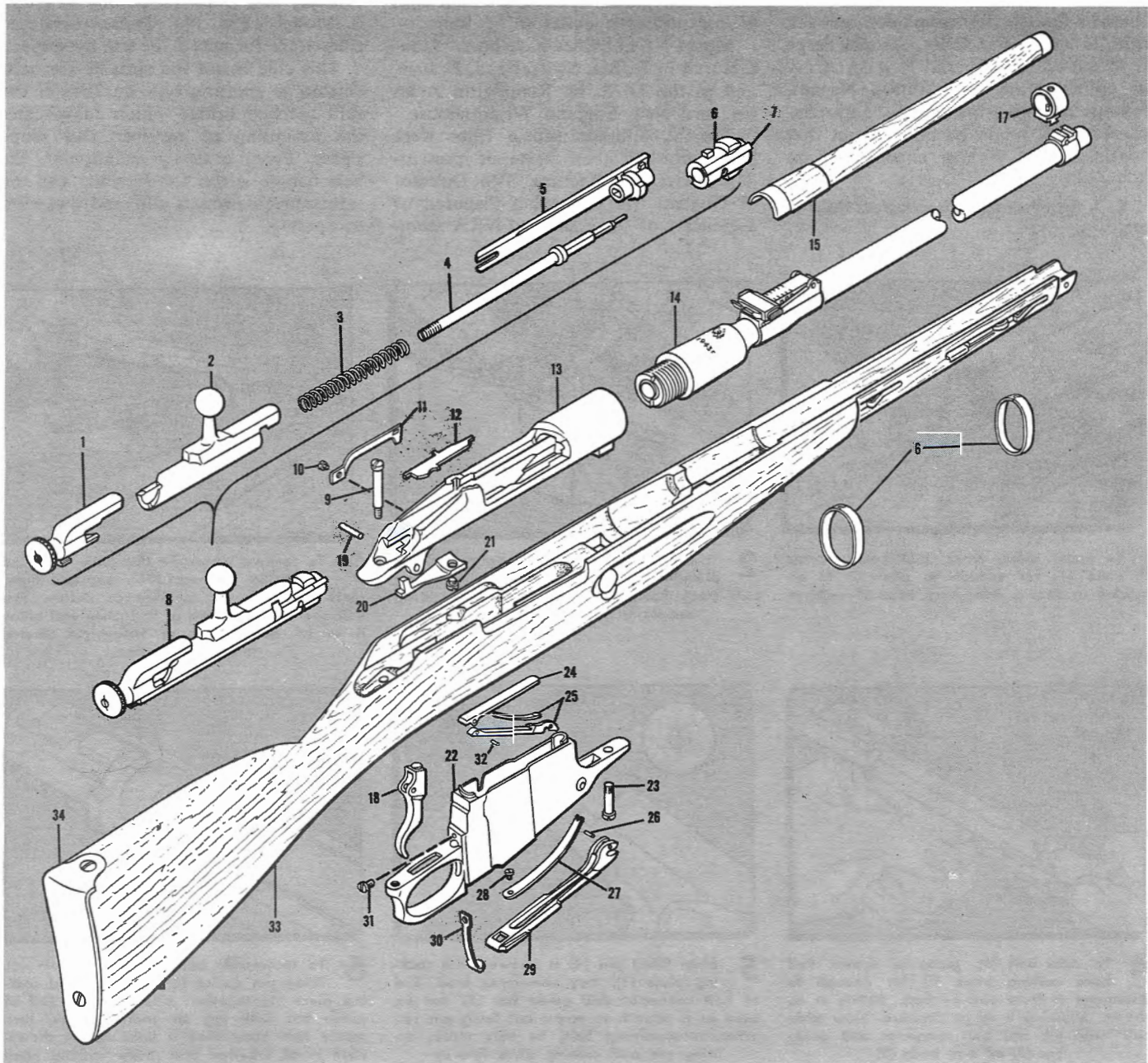
**6** To reassemble bolt, screw firing pin (4), firing pin spring (3), bolt (2), and cocking piece (1) together. Line up open end of guide bar with lug on cocking piece, then rotate bolt head until it lines up as shown. Push it all together and rotate cocking piece back to cocked position



The bolt release is simple in that it is only necessary to hold back on the trigger to remove the bolt from the receiver. Bolt takedown is simple and can be done without tools. Floorplate and magazine follower can be removed in an instant for cleaning. The magazine feed system is clever in that only one cartridge can enter the feedway at a time. A cartridge feed interrupter is actuated by the pressure of the bolt as it rides over the ejector. The interrupter separates the incoming round from other cartridges in the magazine, relieving it of the pressure of the rounds below, thus preventing rim over rim jams.

### Parts Legend

- |  |                                      |
|--|--------------------------------------|
| 1 Cocking piece                        | 18 Trigger                           |
| 2 Bolt                                 | 19 Trigger hinge pin                 |
| 3 Firing pin spring                    | 20 Trigger spring and bolt stop      |
| 4 Firing pin                           | 21 Bolt stop retaining screw         |
| 5 Bolt connector and guide bar         | 22 Magazine and trigger guard        |
| 6 Bolt head                            | 23 Front guard screw                 |
| 7 Extractor                            | 24 Magazine follower                 |
| 8 Bolt (assembled)                     | 25 Magazine follower spring assembly |
| 9 Rear guard screw                     | 26 Follower hinge pin                |
| 10 Ejector spring retaining screw      | 27 Lower magazine follower spring    |
| 11 Ejector spring and feed interrupter | 28 Spring retaining screw            |
| 12 Ejector                             | 29 Magazine floorplate               |
| 13 Receiver                            | 30 Floorplate latch                  |
| 14 Barrel assembly                     | 31 Floorplate latch screw            |
| 15 Handguard                           | 32 Follower hinge pin (upper)        |
| 16 Front and rear barrel bands         | 33 Stock                             |
| 17 Front sight                         | 34 Buttplate                         |







# Mossberg Model 144-LS .22 Rifle

By James M. Triggs

**T**HE Mossberg Model 144-LS, cal. .22 long rifle, smallbore target rifle was introduced in 1954 by O. F. Mossberg & Sons, Inc. Weighing only 8 lbs., it is for those who prefer a medium-weight, moderate price target rifle.

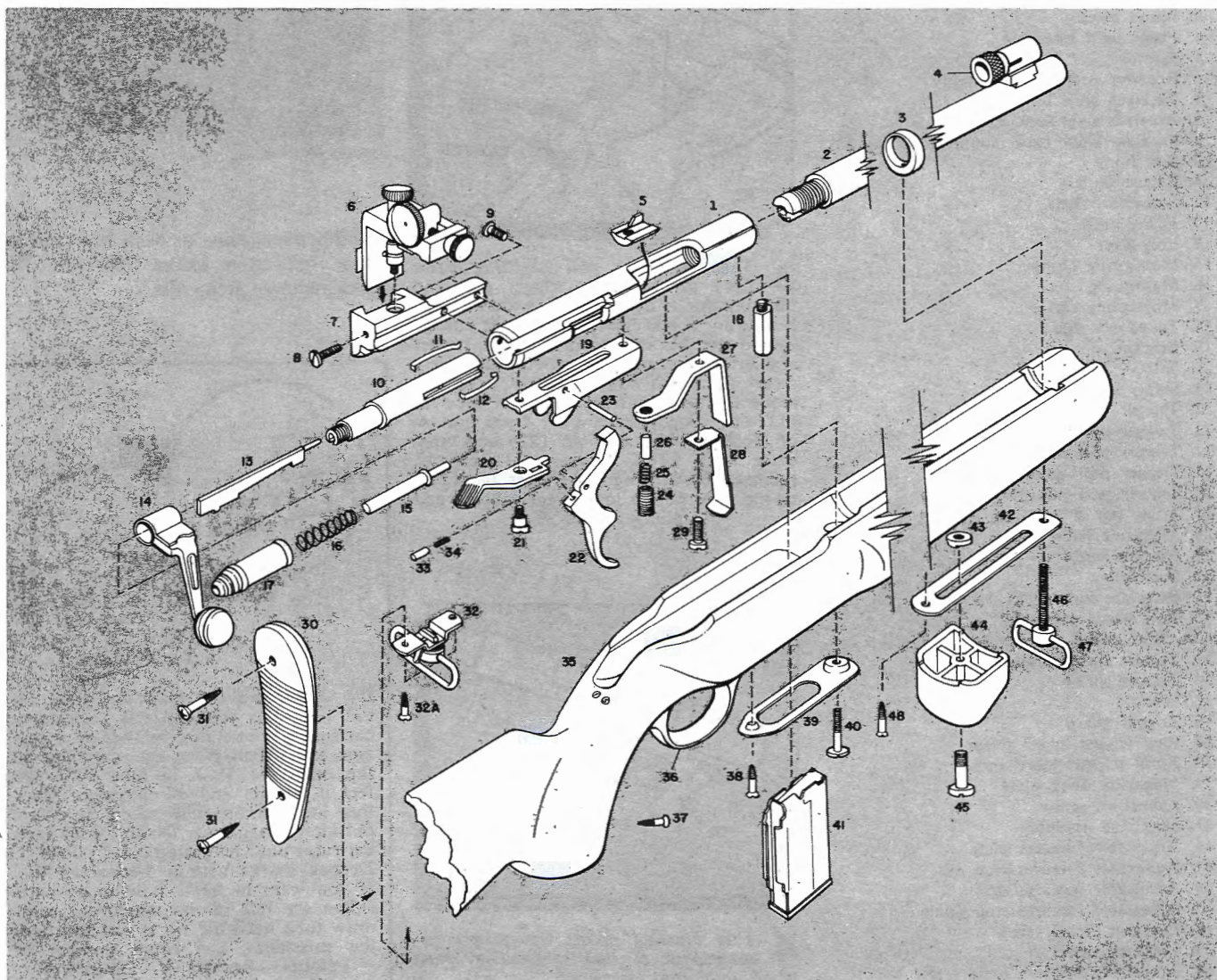
The turnbolt action of this rifle is basically similar to that of the Mossberg Model 44-US which was a training rifle used by the Army in World War II. Cocking occurs as the bolt is rotated

open; when the action is cocked, an indicator projects from the rear of the bolt. Dual extractors are provided, and the safety at the rear of the action aligns with red and green buttons on the stock to indicate fire and safe positions. The magazine is of detachable box-type and holds 7 rounds.

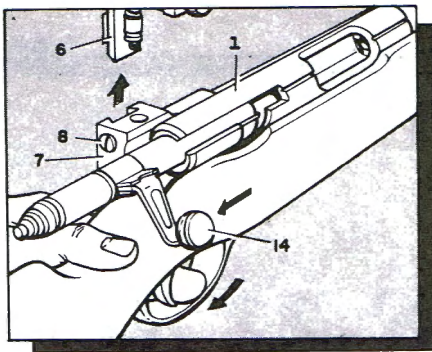
A medium-weight barrel is used, and the target-type walnut stock has a high comb, full pistol grip, and a beavertail

fore-end. Swivels for a 1¼" sling are provided, and there is an adjustable hand stop behind the front sling swivel.

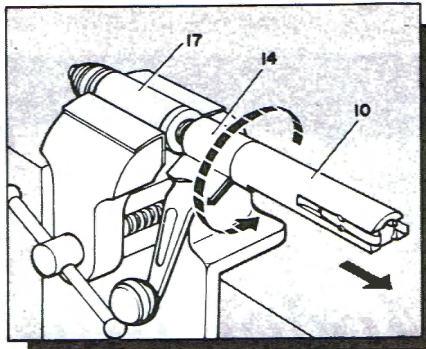
Sighting equipment is the Lyman 17A target front sight with interchangeable inserts, and a Mossberg aperture rear sight with quarter-minute click adjustments for windage and elevation. When introduced, the rear sight was the Lyman 57MS, and the "LS" in this rifle's designation stands for Lyman sights.







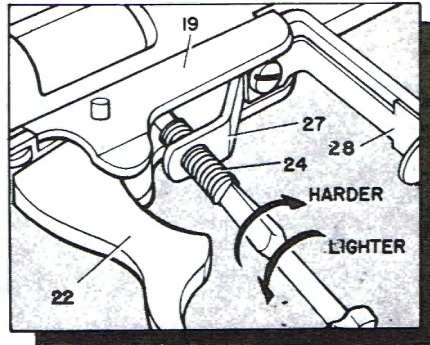
**1** To remove bolt from receiver, open bolt and be sure rifle is unloaded. Press magazine latch (28) rearward and remove magazine assembly (41) from rifle. Loosen receiver sight lock screw (8) in sight base (7). Lift receiver peep sight assembly (6) up out of base. Pull back trigger and slide bolt out of receiver to rear. Unscrew takedown screw (40) and forearm swivel screw (46), and remove action and barrel assembly from stock



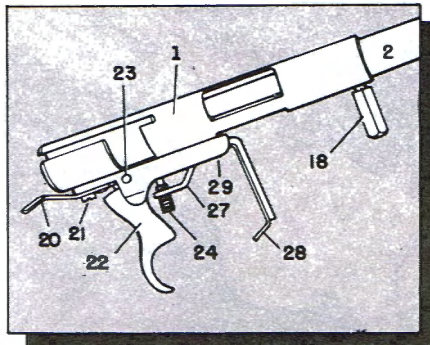
**2** To disassemble bolt, clamp mainspring cap (17) in padded vise as shown. Use bolt lever (14) for handle and unscrew bolt body (10) from cap and remove bolt body, mainspring (16), plunger (15), firing pin (13), and bolt lever (14). Note that left and right extractors (11 & 12) are retained in the bolt body by permanent crimps punched in bolt body. Removal of the extractors is not recommended

## Parts Legend

1. Receiver
2. Barrel
3. Barrel band
4. Front sight assembly
5. Ejector
6. Receiver peep sight assembly
7. Receiver sight base
8. Receiver sight lock screw
9. Receiver sight base mounting screws (2)
10. Bolt body
11. Extractor, left
12. Extractor, right
13. Firing pin
14. Bolt lever
15. Mainspring plunger
16. Mainspring
17. Mainspring cap
18. Takedown stud
19. Bracket
20. Safety
21. Safety screw
22. Trigger
23. Trigger pin
24. Trigger pull adjusting screw
25. Trigger pull adjusting spring
26. Trigger pull adjusting plunger
27. Angle bar & adjusting bracket
28. Magazine latch
29. Bracket screw
30. Buttplate
31. Buttplate screws (2)
32. Butt swivel assembly
- 32A. Butt swivel screws (2)
33. Trigger spring plunger
34. Trigger spring
35. Stock
36. Trigger guard
37. Rear trigger guard screw
38. Front trigger guard screw
39. Magazine stock plate
40. Takedown screw
41. Magazine assembly
42. Adjustable forearm plate
43. Adjustable forearm stop nut
44. Adjustable forearm stop
45. Adjustable forearm stop screw
46. Forearm swivel screw
47. Forearm swivel
48. Adjustable forearm plate screw



**3** Turn in trigger pull adjusting screw (24) for a harder trigger pull and turn out for a lighter pull as shown. Adjusting for a pull lighter than three pounds should not be attempted. Remove trigger and safety assembly by unscrewing safety screw (21) and bracket screw (29). Remove ejector (5) from inside of receiver (1), and drop bracket (19) from bottom of receiver with angle bar (27) and magazine latch (28). Trigger (22) can be removed by drifting out trigger pin (23), taking care not to lose trigger spring and plunger (34 & 33)



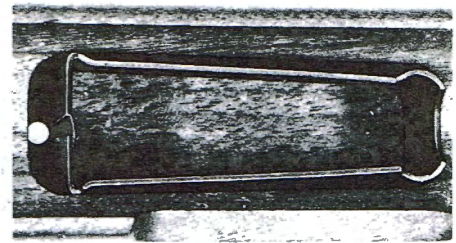
**4** This drawing shows the proper arrangement of lock mechanism parts when they are assembled

## Blind-Box Magazine

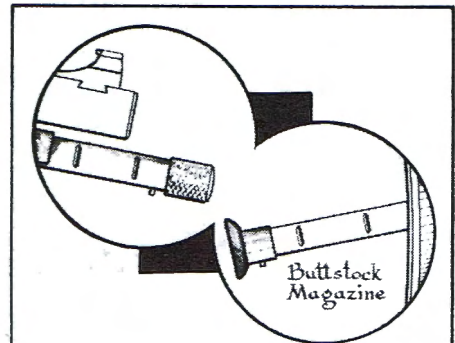
*What is a blind-box magazine?*

**Answer:** A blind-box or enclosed magazine is not cut entirely through the stock. There is no floorplate, and the magazine consists of a simple mortise in the wood. In the Remington 700 ADL rifle, this is lined on sides and ends with sheet metal, but magazines of this type on custom rifles may be unlined. The front guard screw is usually inserted through a metal escutcheon inlaid in the underside of the forearm.

Advantages of the blind-box magazine are cost saving, a slight weight saving, neater appearance, and no danger of accidentally opening the magazine and spilling cartridges. A disadvantage is that unloading the magazine must be done by working the cartridges through the rifle action. There is also greater likelihood of feeding malfunctions due to improper shaping of the magazine box. This latter is unlikely with enclosed magazines which have a metal liner shaped by the factory.—J.H.D.



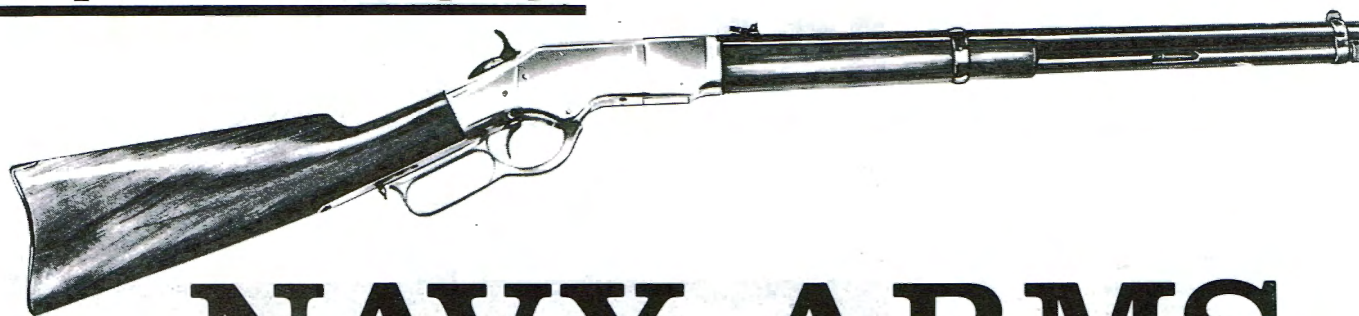
Blind-box magazine as seen from the top of a Remington Model 700 ADL rifle stock removed from rifle.



By graduating the magazine tube on cal. .22 rifles you can tell how many cartridges it contains. Withdraw magazine tube, then place one cartridge in the magazine. Push in tube until you feel it contact end of cartridge. Mark this location on tube where it enters outside of magazine. Do this with each cartridge until magazine is fully loaded. Deepen marks with a 3-cornered file. If you want to know how many cartridges are left in the magazine, withdraw tube until the tip is just touching the cartridges, and count number of notches.—ROBERT V. THOMPSON



## EXPLODED VIEWS:



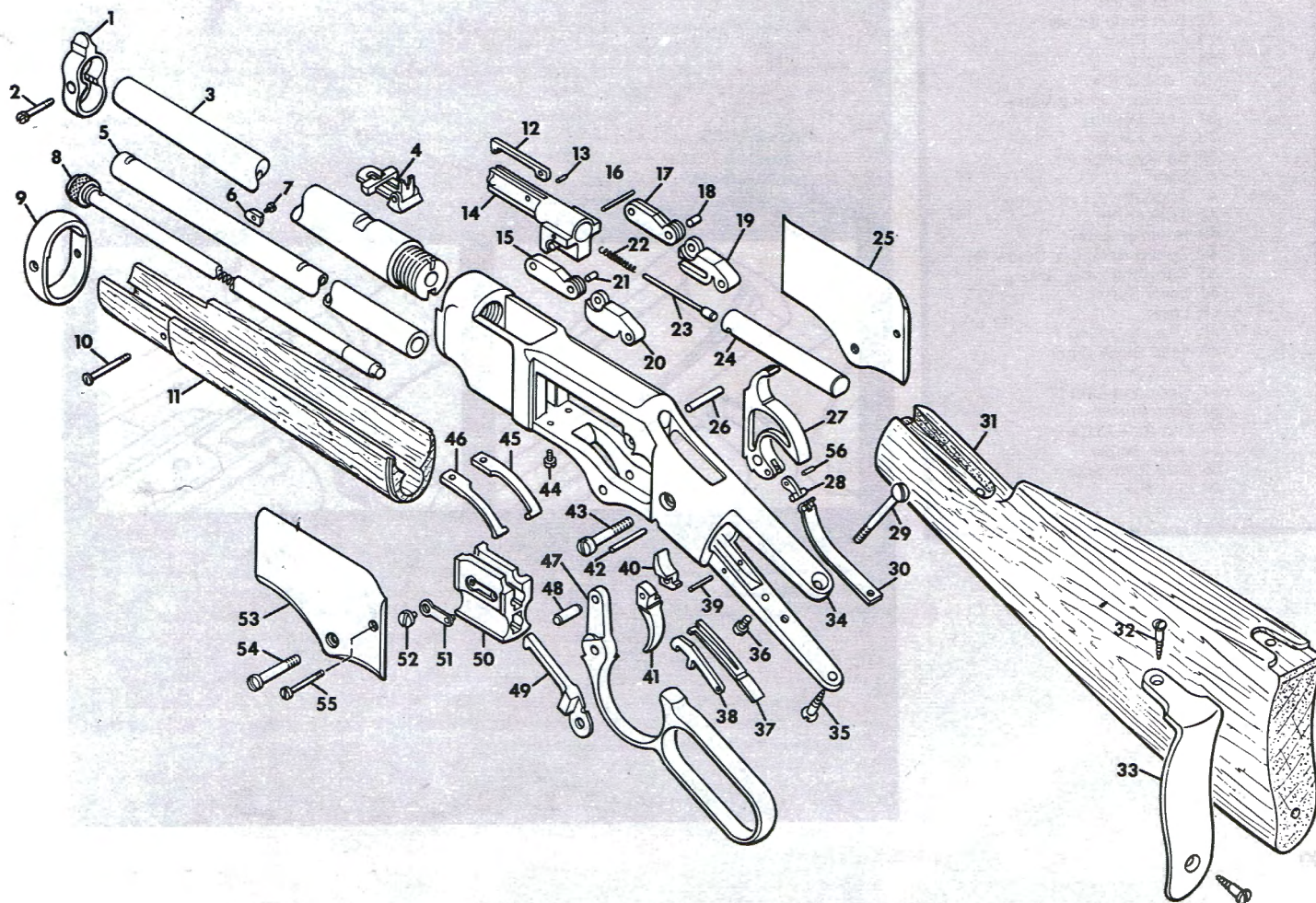
# NAVY ARMS MODEL 66

Drawings by E. J. Hoffschmidt,

Text by Andy Kendzie

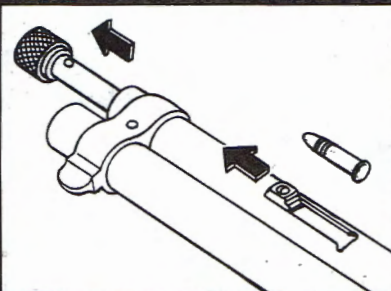
THE Navy Arms Model 66 Yellowboy was made as a replica of one of the most significant firearms in American history — the Winchester 66. Chambered in .22 long rifle, the Model 66 Yellowboy was made for Navy Arms by Uberti of Italy, and was first produced in 1966, the centennial of the original Winchester. This lever action rimfire featured a 19" blued barrel set in a polished brass frame, and was available in three styles of engraving.

The gun was later made in .38 Spl. and .44/40 as well as the .22, and there was a Trapper's Model which sported a 16" barrel. When Navy Arms saw the production costs climb too high, the 66 was set aside and Uberti stopped production. Approximately 20,000 guns were made in all, with the last one being produced in 1978. ■

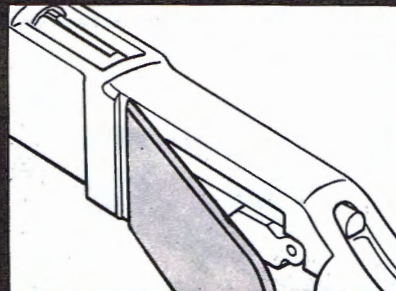




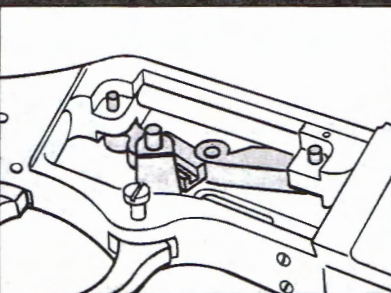
1. Front Band
2. Band Screw
3. Barrel
4. Rear Sight
5. Magazine Tube
6. Magazine Tube Button
7. Button Retaining Screw
8. Magazine Follower
9. Forend Band
10. Band Screw
11. Forend
12. Extractor
13. Extractor Pin
14. Bolt
15. Left Front Link
16. Connecting Pin
17. Right Front Link
18. Link Pin
19. Right Rear Link
20. Left Rear Link
21. Link Pin
22. Firing Pin Spring
23. Firing Pin
24. Firing Pin Extension
25. Right Side Plate
26. Link Hinge Pin
27. Hammer
28. Hammer Link
29. Tang Screw
30. Hammer Spring
31. Butt Stock
32. Butt Plate Screw
33. Butt Plate
34. Receiver
35. Tang Screw
36. Hammer Spring Screw
37. Sear Spring
38. Grip Safety
39. Safety Hinge Pin
40. Sear
41. Trigger
42. Trigger Pin
43. Hammer Screw
44. Spring Retaining Screw (2)
45. Cartridge Lifter Spring
46. Lever Spring
47. Lever
48. Link Operating Pin
49. Feed Block Lifter
50. Feed Block
51. Cartridge Stop
52. Stop Screw
53. Left Side Plate
54. Lever Screw
55. Side Plate Screw
56. Link Pin



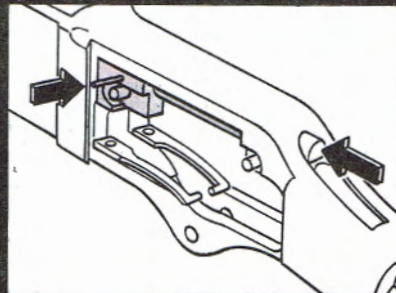
1 — To load Model 66 .22 lever-action, first push back the button (6) that covers the opening in the magazine tube. Seventeen .22 long rifle cartridges can then be inserted as shown. When the tube is loaded, push the follower assembly in and rotate it one quarter turn to lock it in place.



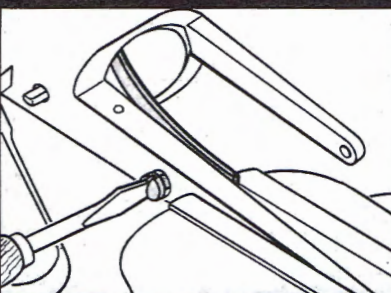
2 — To disassemble the mechanism, the side plates (25) and (53) must be removed. Begin by removing the lever hinge screw (54), then unscrew the side plate screw (55) a few turns and tap it gently. This will loosen the right side plate (25). Then remove the screw (55) entirely and lift off the left plate. (When reassembling, insert the front edge of the sideplate under the lip of the receiver and replace screws.)



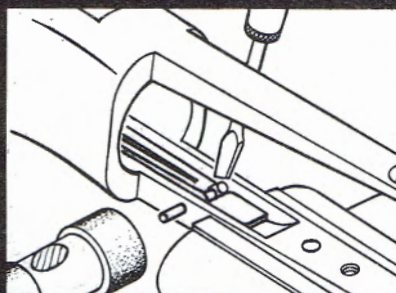
3 — After the side plates are removed, the pair of left and right links (15) (20) and (17) (19) can be lifted off the hinge pins on the bolt (14) and the link hinge pin (26). When replacing the links, insert the lever screw (54) in order to line up the lever. Insert the operating pin (48) and install the links. Hold the links on the operating pin while the hinge screw is removed and the side plates installed. Then replace the lever hinge screw.



4 — The bolt (14) and the firing pin extension (24) are held together by a long, thin connecting pin (16). To remove the bolt or the firing pin (23) and spring (22), push out this connecting pin (16). Remove the firing pin extension (24) through the back of the frame. Then pull the bolt rearwards and allow the end to drop.



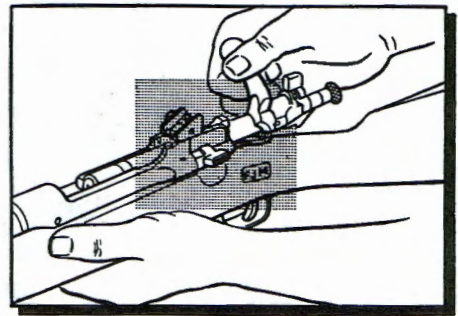
5 — To remove the hammer spring (30), the butt stock must first be removed. To do this, first remove the upper tang screw (29) and the lower tang screw (35). Using the heel of the hand, hit the butt stock gently until it can be pulled free. Pull down the lever and remove the hammer spring screw (36). When replacing the hammer spring, first hook it on to the hammer link, line up the screw holes, and with the spring and receiver secured in a padded vise, turn the screw until it has caught the threads in the spring.



6 — The Model 66 has a built in safety device. When the hammer is cocked, the trigger cannot be pulled until the lever is squeezed up against the tang. In order to remove this grip safety (38), or the sear and trigger spring (37), drive out the safety hinge pin (39). Since the sear and trigger spring is very stiff, it may be necessary to push down on the incoming end of the pin with a screwdriver to align it with the hole on the opposite side of the tang.

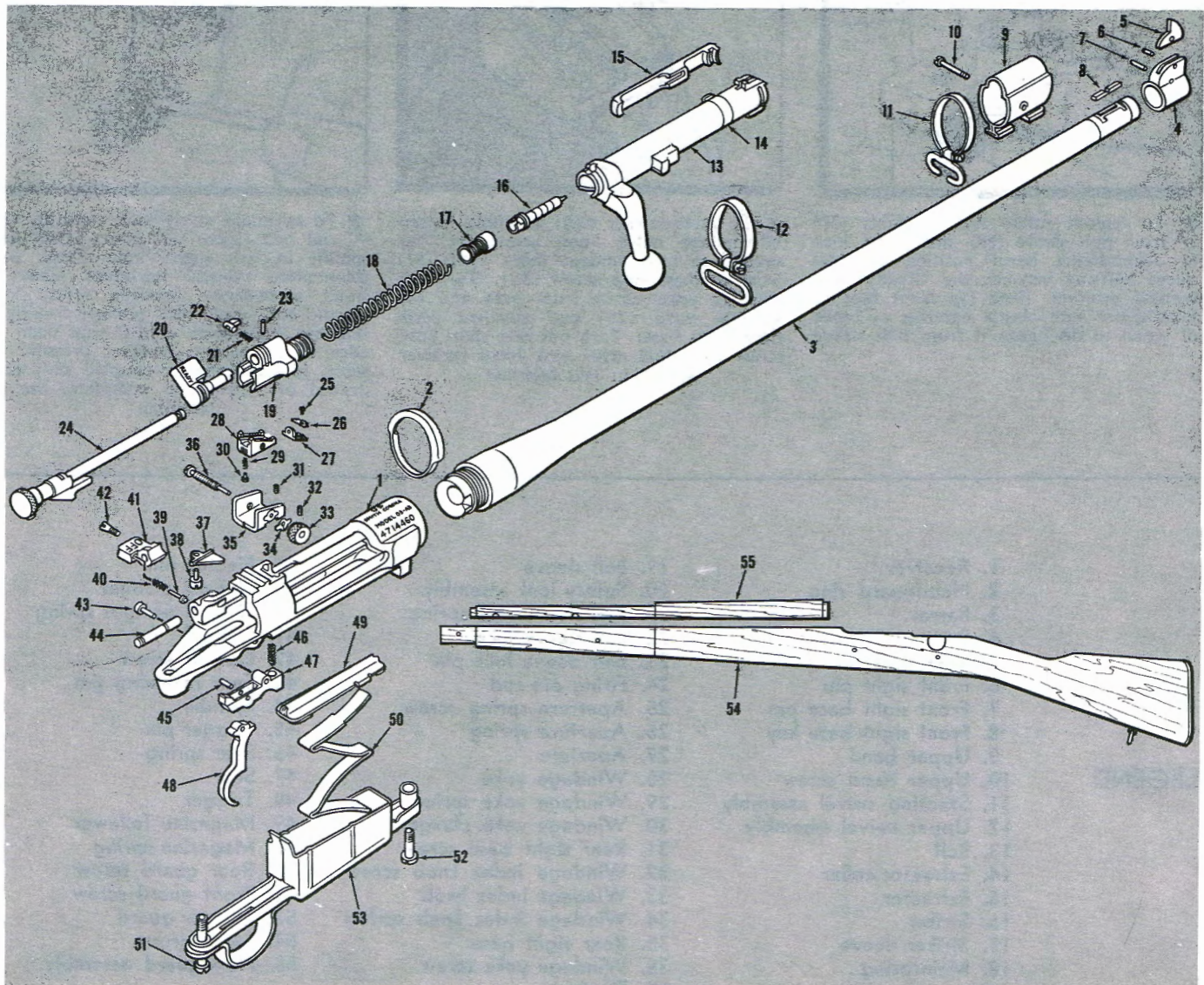


# The 03A3 Springfield

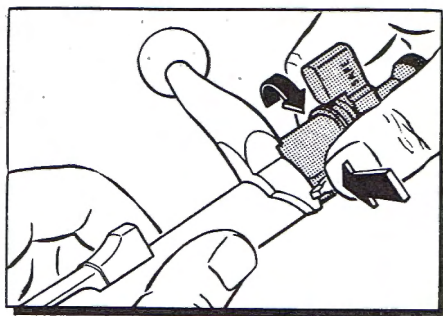


**1** To remove bolt assembly cock rifle and then turn safety lock (20) until thumb-piece is vertical. Rotate cut-off (41) to center notch position and pull bolt assembly to rear and out of receiver

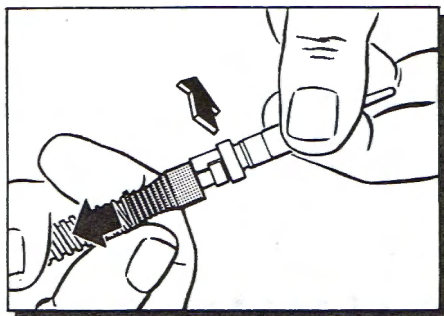
By E. J. Hoffschmidt



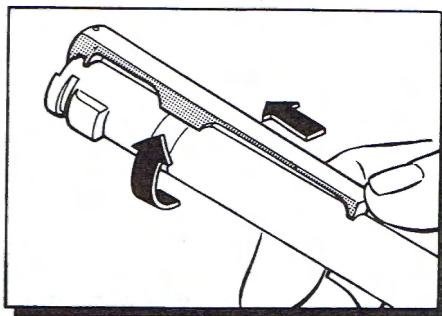




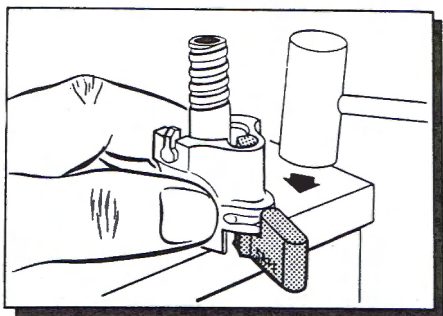
**2** To remove firing pin mechanism from bolt depress bolt sleeve lock (22) with thumbnail and unscrew bolt sleeve (19) with firing pin mechanism from bolt (13)



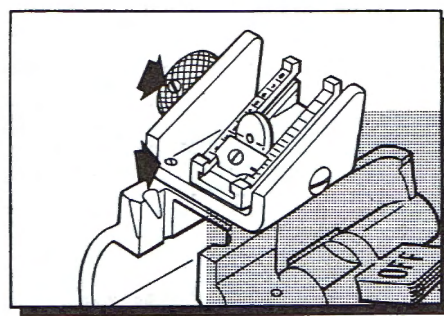
**3** To disassemble firing pin mechanism rotate safety lock (20) to "Ready" position. Then place cocking knob of firing pin rod (24) against bench top and pull striker sleeve (17) to rear until striker (16) can be pulled away from end of firing pin rod



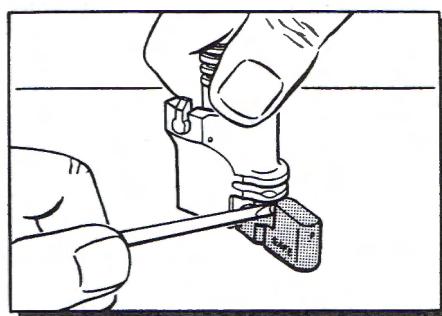
**4** To remove extractor (15) from bolt (13), turn it to right, forcing its tongue out of its groove in front of bolt. Then force extractor forward and off bolt



**5** To remove safety lock assembly (20) from bolt sleeve (19) turn safety lock to dismounting bevel position on bolt sleeve halfway between the "Ready" and vertical position. Then tap front face of thumbpiece with plastic hammer or block of wood to disengage it from bolt sleeve



**6** To remove rear sight assembly loosen windage index knob screw (32) far enough to free windage index knob (33) from windage yoke screw (36). Turn out windage yoke screw from base and lift windage yoke (28) and attached parts from sight base. Turn out rear sight base screw (31) and drive base from receiver with drift and hammer

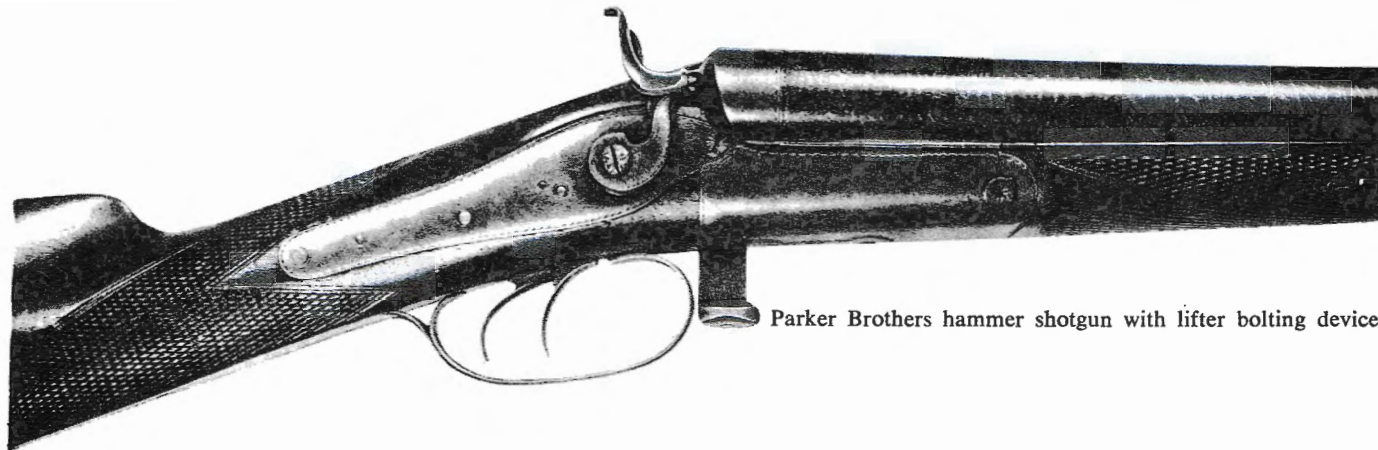


**7** To assemble safety lock assembly (20) and bolt sleeve (19) insert safety lock spindle in bolt sleeve hole. Then, with thumbpiece vertical introduce blade of small screwdriver between safety lock spindle and safety lock plunger forcing it into the thumbpiece until it slips over the edge of the sleeve. Further pressure on safety lock thumbpiece coupled with withdrawal of screwdriver completes the assembling

## LEGEND

- |                              |                               |                            |
|------------------------------|-------------------------------|----------------------------|
| 1. Receiver                  | 19. Bolt sleeve               | 38. Ejector pin            |
| 2. Handguard ring            | 20. Safety lock assembly      | 39. Cut-off plunger        |
| 3. Barrel                    | 21. Bolt sleeve lock spring   | 40. Cut-off plunger spring |
| 4. Front sight base          | 22. Bolt sleeve lock          | 41. Cut-off                |
| 5. Front sight               | 23. Bolt sleeve lock pin      | 42. Cut-off screw          |
| 6. Front sight pin           | 24. Firing pin rod            | 43. Sear retaining pin     |
| 7. Front sight base pin      | 25. Aperture spring screw     | 44. Spindle                |
| 8. Front sight base key      | 26. Aperture spring           | 45. Trigger pin            |
| 9. Upper band                | 27. Aperture                  | 46. Sear spring            |
| 10. Upper band screw         | 28. Windage yoke              | 47. Sear                   |
| 11. Stacking swivel assembly | 29. Windage yoke spring       | 48. Trigger                |
| 12. Upper swivel assembly    | 30. Windage yoke plunger      | 49. Magazine follower      |
| 13. Bolt                     | 31. Rear sight base screw     | 50. Magazine spring        |
| 14. Extractor collar         | 32. Windage index knob screw  | 51. Rear guard screw       |
| 15. Extractor                | 33. Windage index knob        | 52. Front guard screw      |
| 16. Striker                  | 34. Windage index knob spring | 53. Trigger guard          |
| 17. Striker sleeve           | 35. Rear sight base           | 54. Stock group            |
| 18. Mainspring               | 36. Windage yoke screw        | 55. Handguard assembly     |
|                              | 37. Ejector                   |                            |





Parker Brothers hammer shotgun with lifter bolting device

# Parker Double-Barrel Shotgun

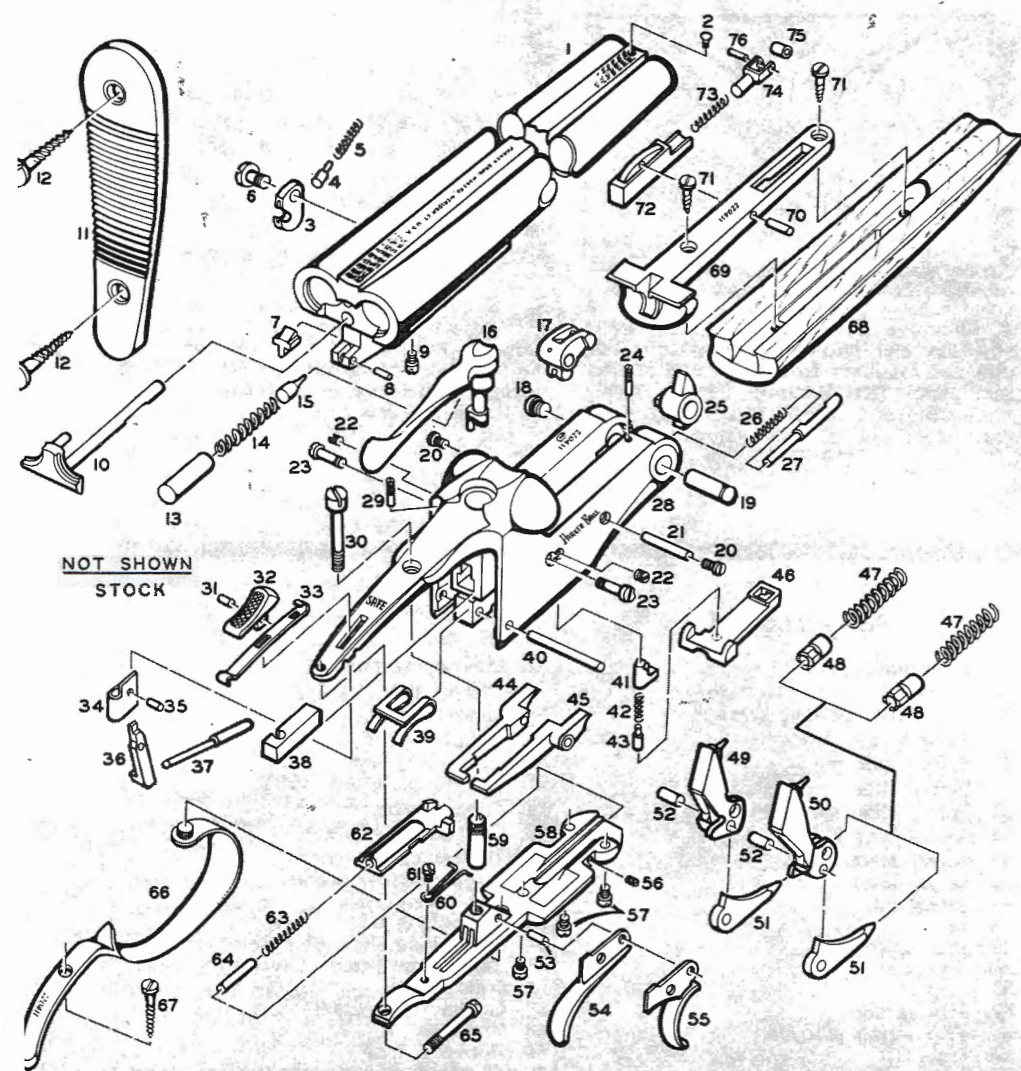
By Thomas E. Wessel

IN 1832 Charles Parker of Meriden, Conn., organized the Parker Co. to make coffee mills and subsequently bench vises. In 1860 the firm was reorganized to become Parker, Snow, Brooks & Co. On Sept. 28, 1863, the firm signed a contract with the government to make 15,000 Model 1861 rifled muskets at \$19 each. This contract was fulfilled. Upon termination of the Civil War, Charles Parker became president of the Meriden Mfg. Co., which position he held until 1868 when the firm of Parker Brothers was organized.

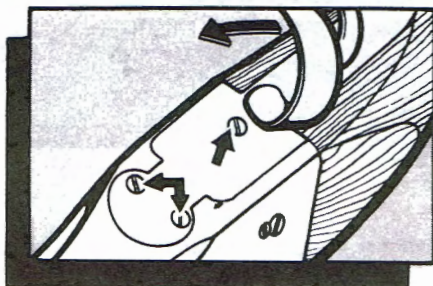
Their first shotgun was made in 1868 and was known as the 'Parker Brothers'. Of hammer type, it featured a lifter bolting device, and the fore-end was attached to the barrels with a cross-key. In 1879 an improved fore-end assembly based on the Deeley & Edge system was made standard. A hammerless lock was adopted in 1889, with automatic ejectors first offered in 1902. The Parker single trigger was introduced in 1922.

On June 1, 1934, the assets of the Parker firm were purchased by Remington Arms Co., Inc., but with the advent of World War II production of Parker shotguns was discontinued and was not resumed with the coming of peace.

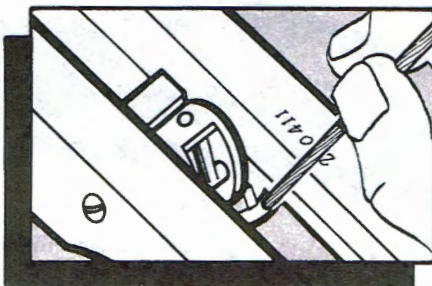
The Parker shotgun was essentially machine made, although much hand-fitting was involved in its production. Forgings were machined slightly oversize and then hand fitted by filing and scraping. Reputation of the Parker shotgun was founded on uniformly excellent quality and durability as well as fine balance and handling qualities. Parkers were offered in several grades, and all but the cheapest Trojan grade could be ordered built to customers' specifications. Regardless of price, the Parker shotgun justly earned its title of 'Old Reliable'.



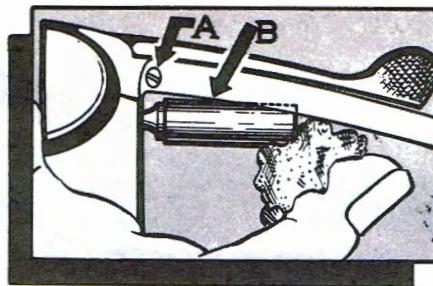




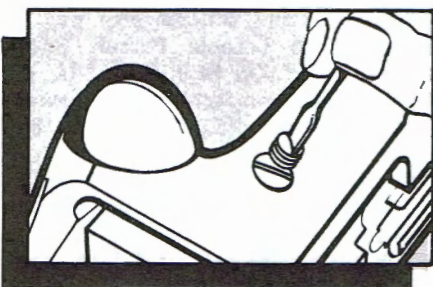
**1** Commence disassembly by removing fore-end assembly and barrels (1). Remove guard bow screw (67) and rear tang screw (65). Unscrew guard bow (66) and remove 3 trigger plate screws (57, arrows). Turn gun right side up and push top-lever (16) to right. Remove front tang screw (30)



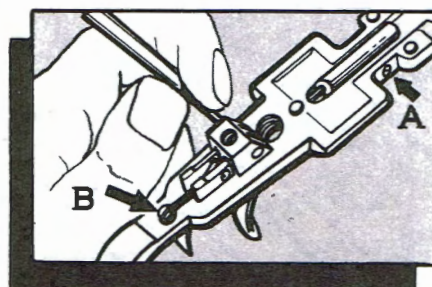
**2** Tap out trigger plate (58) and attached assembly. Use a small wood dowel inserted into forward part of receiver (28) and just in front of cocking crank (17) where a portion of the foremost surface of trigger plate may be seen. Lift trigger plate assembly away, while lifting out cocking slide (46). Trip (41) and its internal assembly will also drop out. Trip sears (44 & 45), drift out sear pin (40), and remove sears. This will permit removal of stock



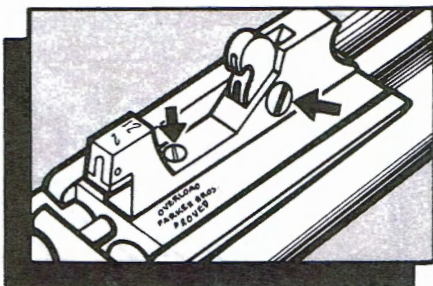
**3** Continue (A) by removing top-lever retaining screw (29). Using a piece of cotton waste for padding, place thumb against top-lever spring shell (13) and fingers against face of receiver. Pry shell away from tang at (B) using a small screwdriver or hardwood wedge. Withdraw top-lever spring shell, spring (14), and plunger (15). Top-lever (16) may now be lifted out, and bolt (38) withdrawn rearward from receiver



**4** Next, remove hammer fastening screws (22) and hammer screws (23). Hammers (49 & 50), hammer stirrups (51), mainspring plungers (48), and mainsprings (47) will drop out. It is best to hold a large cloth at rear of receiver while doing this to prevent loss of parts which are under spring tension



**5** Remove (A) unhooking slide screw (56) and withdraw unhooking slide (62) and assembly from front end of trigger plate. (B) Remove trigger spring screw (61) and trigger spring (60). Drift out trigger pin (53) and remove triggers (54 & 55)



**6** Remove extractor screw (9) and slide extractor out and away rearward. Remove cocking link screw (6) and cocking link (3), link spring pin (4), and link spring (5). Removal of extractor or cocking link is not dependent on prior removal of one or the other. Reassemble in reverse sequence

### Parts Legend

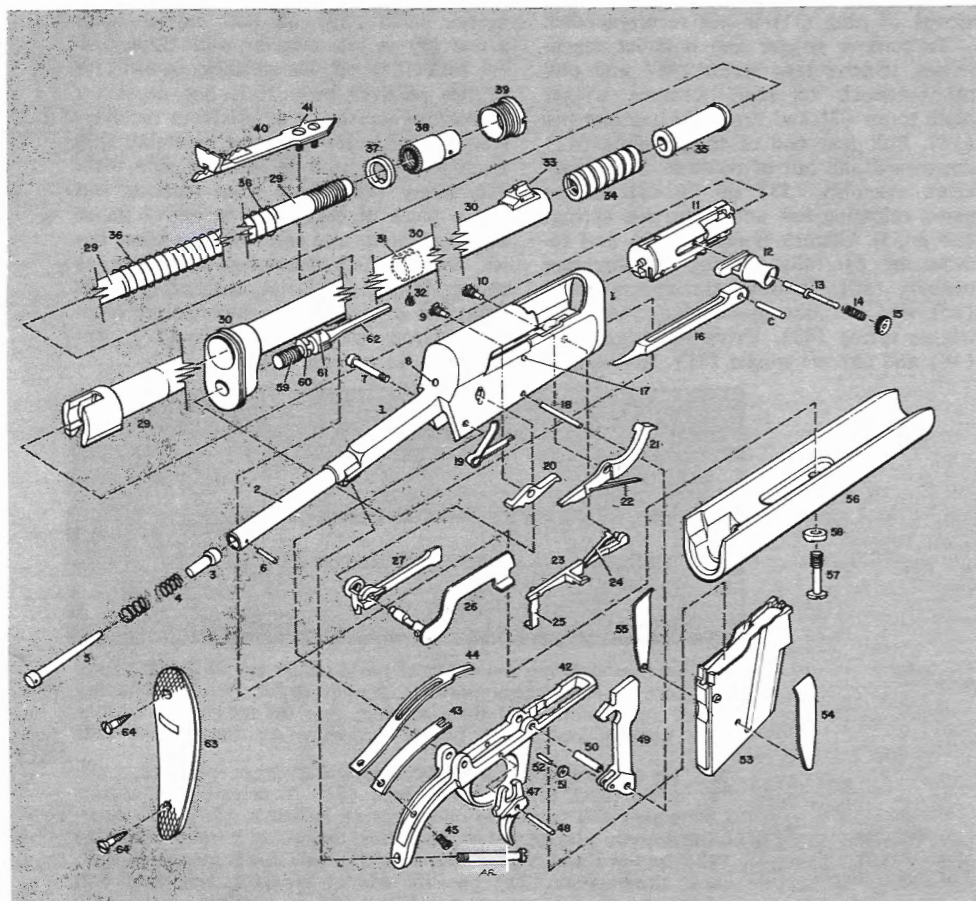
- |                                      |                               |                               |
|--------------------------------------|-------------------------------|-------------------------------|
| 1. Barrels                           | 27. Unhooking pin             | 52. Mainspring pin (2)        |
| 2. Front sight                       | 28. Receiver                  | 53. Trigger pin               |
| 3. Cocking link                      | 29. Top-lever retaining screw | 54. Trigger, left             |
| 4. Cocking link spring pin           | 30. Tang screw, front         | 55. Trigger, right            |
| 5. Cocking link spring               | 31. Safety slide pin          | 56. Unhooking slide screw     |
| 6. Cocking link screw                | 32. Safety slide              | 57. Trigger plate screw (3)   |
| 7. Bolt plate                        | 33. Safety slide spring       | 58. Trigger plate             |
| 8. Bolt plate retaining pin          | 34. Safety lever jacket       | 59. Tang screw sleeve         |
| 9. Extractor screw                   | 35. Safety lever pin          | 60. Trigger spring            |
| 10. Extractor                        | 36. Safety lever              | 61. Trigger spring screw      |
| 11. Buttplate                        | 37. Safety pin                | 62. Unhooking slide           |
| 12. Buttplate screw (2)              | 38. Bolt                      | 63. Unhooking slide spring    |
| 13. Top-lever spring shell           | 39. Sear spring               | 64. Unhooking slide plunger   |
| 14. Top-lever spring                 | 40. Sear pin                  | 65. Tang screw, rear          |
| 15. Top-lever spring plunger         | 41. Trip                      | 66. Guard bow                 |
| 16. Top-lever                        | 42. Trip spring               | 67. Guard bow screw           |
| 17. Cocking crank                    | 43. Trip spring plunger       | 68. Fore-end                  |
| 18. Joint pin screw                  | 44. Sear, left                | 69. Fore-end iron             |
| 19. Joint pin                        | 45. Sear, right               | 70. Fore-end plunger box pin  |
| 20. Cocking crank pin stop screw (2) | 46. Cocking slide             | 71. Fore-end screw (2)        |
| 21. Cocking crank pin                | 47. Mainspring (2)            | 72. Fore-end plunger box      |
| 22. Hammer fastening screw (2)       | 48. Mainspring plunger (2)    | 73. Fore-end plunger spring   |
| 23. Hammer screw (2)                 | 49. Hammer, left              | 74. Fore-end plunger          |
| 24. Unhooking pin screw              | 50. Hammer, right             | 75. Fore-end plunger roll     |
| 25. Joint roll                       | 51. Hammer stirrup (2)        | 76. Fore-end plunger roll pin |
| 26. Unhooking pin spring             |                               |                               |





# Remington Models 8 & 81 Autoloading Rifles

By James M. Triggs



THE Remington Model 81 Woods-master autoloading rifle was produced from 1936 until 1950. Except for minor differences, it is mechanically identical to the Remington Model 8 5-shot autoloading rifle produced from 1906 until 1936. Design of the Model 8 rifle was based on U. S. Patent No. 659,786 granted Oct. 16, 1900 to John M. Browning. It was the first successful high power autoloading rifle produced in America. Manufacturing and sales rights were sold to Remington.

The Model 8 rifle has a locked breech long-recoil action wherein the barrel, bolt, and bolt carrier assembly recoil several inches together so that the bullet has cleared the barrel before unlocking begins. The bolt has twin locking lugs which engage locking recesses within the barrel extension. The barrel, suspended in guide bushings, is surrounded by 2 heavy coil-type springs in turn covered by a sheet-metal jacket. These springs are compressed on rearward movement of the barrel bolt and bolt carrier assembly.

At the end of recoil the bolt carrier is locked into rear of the receiver. Energy of the compressed recoil spring then drives the barrel forward, which cams the bolt open to unlock it from the barrel extension. When the barrel extension reaches its forward position, it trips the barrel lock allowing the bolt

## Parts Legend

- |  |   |                                 |
|--|---|---------------------------------|
| 1. Receiver                            | 22. Barrel lock spring  | 43. Trigger spring              |
| 2. Action spring tube                  | 23. Magazine indicator  | 44. Mainspring                  |
| 3. Action spring follower              | 24. Magazine indicator spring   | 45. Mainspring screw            |
| 4. Action spring                       | 25. Magazine indicator thumbpiece   | 46. Tang screw                  |
| 5. Action spring plug                  | 26. Safety  | 47. Trigger                     |
| 6. Action spring plug pin              | 27. Safety rocker   | 48. Trigger pin                 |
| 7. Trigger plate screw                 | 28. Safety rocker stop screw (Note: permanently installed inside receiver—removal is not recommended) | 49. Hammer                      |
| 8. Peep sight plug screw               | 29. Barrel  | 50. Hammer bushing              |
| 9. Bolt carrier latch screw            | 30. Barrel jacket   | 51. Hammer roll                 |
| 10. Barrel lock screw                  | 31. Barrel jacket plug  | 52. Hammer roll pin             |
| 11. Bolt assembly (complete)           | 32. Barrel jacket plug screw  | 53. Magazine assembly           |
| 12. Operating handle                   | 33. Front sight assembly  | 54. Magazine side spring, right |
| 13. Operating handle plunger           | 34. Buffer spring   | 55. Magazine side spring, left  |
| 14. Operating handle plunger spring    | 35. Recoil spring case  | 56. Fore-end                    |
| 15. Operating handle bushing           | 36. Recoil spring   | 57. Fore-end screw              |
| 16. Link (See Fig. 4 for link pin "C") | 37. Barrel nut washer   | 58. Fore-end escutcheon         |
| 17. Safety detent ball                 | 38. Barrel nut  | 59. Takedown screw              |
| 18. Hammer pin                         | 39. Barrel jacket bushing   | 60. Takedown screw washers      |
| 19. Bolt carrier latch spring          | 40. Bar sight assembly  | 61. Takedown lever pin          |
| 20. Bolt carrier latch                 | 41. Bar sight mounting screws (2)   | 62. Takedown lever              |
| 21. Barrel lock                        | 42. Trigger plate   | 63. Buttplate                   |
|  |   | 64. Buttplate screws (2)        |
|  |   | 65. Buttstock (not shown)       |



and bolt carrier assembly to move forward under impetus of the compressed action spring which in turn strips a cartridge from the magazine and feeds it into the chamber. When the bolt carrier is fully forward, the bolt is cammed around to lock into the barrel extension. The rifle is then ready to fire.

The action remains open after the

#### DISASSEMBLY PROCEDURE

To take down rifle, press safety (26) down and retract operating handle (12), locking bolt carrier assembly to rear. Unscrew fore-end screw (57) and remove fore-end (56) by pulling downward and forward. Swing takedown lever (62) sideways and unscrew takedown screw (59). Pull barrel jacket (30) and barrel (29) assembly forward out of receiver (1).

To disassemble barrel jacket, a special spanner wrench (Remington Model 81 part No. 107) is required. Use spanner wrench to unscrew barrel nut (38), preventing breech end of barrel from turning by holding a large screwdriver in slot of breech end of barrel. Pull barrel to rear out of barrel jacket and hold so that muzzle end of barrel is clear of front face of barrel jacket bushing (39). Unscrew bush-

last shot. It is closed by depressing the magazine indicator thumbpiece.

The Model 8 rifle was regularly chambered for the .25, .30, .32, and .35 Remington rimless cartridges and was designed for clip loading. The Model 81 rifle was chambered for the same series of Remington cartridges, and was also offered in cal. .300 Sav-

age. Production of the Model 81 in cal. .25 Remington was very limited, and it was not cataloged in this caliber.

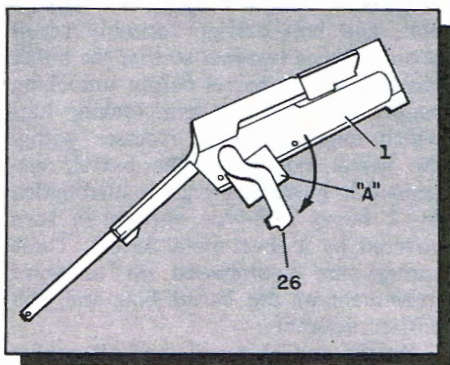
The Models 8 and 81 sporting rifles were never regularly furnished with detachable magazines. The Model 81 Police Special in cal. .30 and .35 Remington was offered with 15-round detachable box-magazine.

ing from barrel jacket with spanner wrench, taking care not to allow compressed recoil spring (36) to escape forcibly. Remove recoil spring, barrel nut washer (37), recoil spring case (35), and buffer spring (34) from barrel jacket. Removal of plug (31) is not recommended.

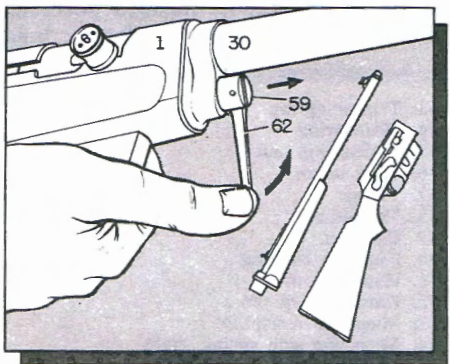
To remove trigger and hammer mechanism, remove tang screw (46) and pull off buttstock to rear. Remove trigger plate screw (7) and drive out hammer pin (18). Pull rear end of trigger plate (42) downward and out of receiver. Push magazine assembly (53) up through trigger plate, releasing left and right side springs (54 & 55). Uncock hammer (49) and remove by carefully drifting out hammer bushing (50). Remove mainspring screw (45) and lift out mainspring (44) and trigger spring (43). Drive out trigger pin (48) and remove trigger (47). Reassemble

in reverse order.

To disassemble receiver components, turn receiver upside down. Depress front end of bolt carrier latch spring (19) from under stud inside receiver and slide rear end of spring off its rear stud. Slide bolt carrier latch (20) off bolt carrier latch screw (9) in left receiver wall. Slide barrel lock (21) off barrel lock screw (10) in left receiver wall. It is not necessary to remove screws (9 & 10) from receiver. Remove magazine indicator assembly (23) from its pivot stud in receiver side wall. Lift safety (26) away from receiver and slip a piece of cardboard or heavy paper between safety and receiver to protect finish. Swing safety down below receiver as shown in Fig. 4. Drive out safety pivot from left to right and remove safety from right. Drop out safety rocker (27). Reassemble in reverse order.



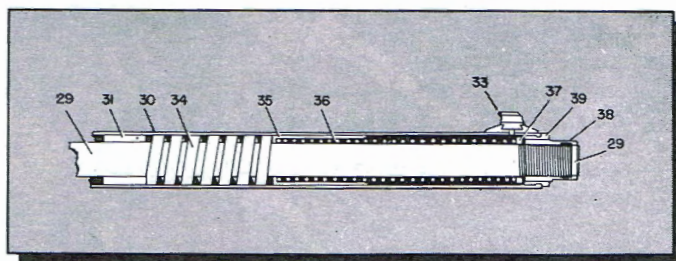
**1** When removing safety (26), slip a piece of paper or cardboard between safety and receiver as shown at 'A'



**2** After removing fore-end, swing takedown lever (62) sideways and unscrew takedown screw (59) as shown. Pull barrel jacket and barrel assembly out of receiver to front

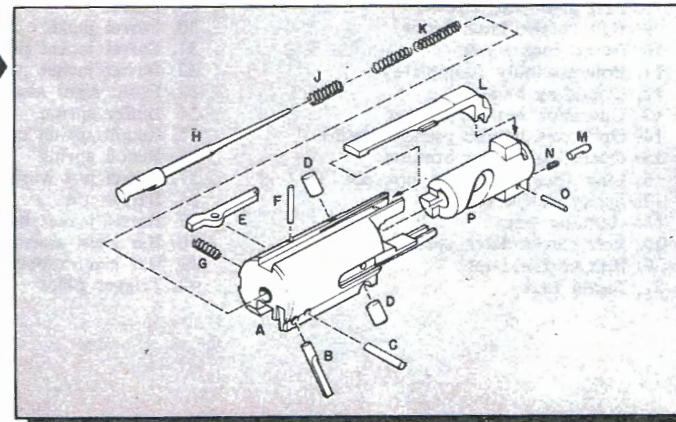
#### Bolt Assembly Parts Legend

- A. Bolt carrier
- B. Firing pin retaining pin
- C. Link pin
- D. Cam pins (2)
- E. Bolt lock
- F. Bolt lock pin
- G. Bolt lock spring
- H. Firing pin
- J. Firing pin buffer spring
- K. Firing pin spring
- L. Extractor
- M. Ejector
- N. Ejector spring
- O. Ejector pin
- P. Bolt



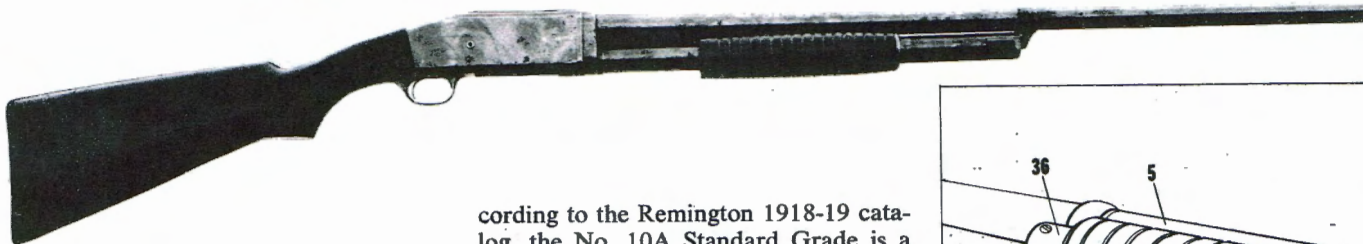
**3** Section showing assembly of parts inside barrel jacket. Take care to reassemble parts in proper order. When replacing barrel nut washer (37) over muzzle, line up tongue in washer with keyway on barrel before screwing on barrel nut (38)

**4** To remove bolt carrier-bolt assembly from receiver, push down front end of barrel lock (21) to release bolt carrier (A) which will then stop on magazine indicator (23). Lift operating handle plunger (13) and slide operating handle assembly (12) forward and out of bolt carrier. Push down magazine indicator thumbpiece (25) on left side of receiver, releasing bolt carrier which will spring out front end of receiver. Take care to catch bolt carrier-bolt assembly on release. To disassemble bolt carrier and bolt assembly, drive out link pin (C) and remove link (16). Drive out firing pin retaining pin (B) and remove firing pin (H) and firing pin buffer spring (J) from rear of bolt carrier. Remove 2 cam pins (D) and pull bolt (P) with extractor (L) forward out of bolt carrier. Remove firing pin spring (K). Drift out bolt lock pin (F) and remove bolt lock (E) and spring (G). Drift out ejector pin (O) and remove ejector (M) and spring (N) from bolt. When reassembling bolt carrier and bolt mechanism in receiver, be sure that rear end of link is seated in action spring follower (3) at rear of receiver. Reassemble in reverse order





# REMINGTON M10 SHOTGUN



Illustrations by JOHN F. FINNEGAN.  
Text by LUDWIG OLSON

REMINGTON entered the slide-action shotgun field in 1907 with a 12-ga. repeater characterized by handsome lines and several interesting features. This takedown shotgun with five-shot tubular magazine was produced under the patents of John D. Pedersen, a well-known arms designer, and has a hammerless action with solid breech. The receiver is closed in except for a loading and ejection port at the bottom. This not only provides safety to the user, but minimizes entry of sand, dirt, snow, rain, and other foreign matter. The gracefully-sloped upper rear portion of the receiver and generally clean lines without projections are responsible for the handsome appearance of the gun.

Among several other features of this striker-fired repeater is a recoil lock which prevents opening of the action by a rearward pull on the fore-end until the latter is released by the recoil of firing. This is designed to prevent accidents from hangfires.

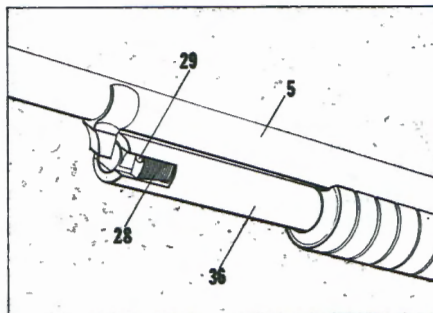
A button on the right side of the receiver is pressed inward to release the action bar and permit opening of the gun when cocked. This button projects slightly when the gun is cocked, and thereby also serves as a cocking indicator.

Other interesting features of this shotgun are the short 7/16" travel of the firing pin which results in fast lock time, and the slide safety in the forward part of the trigger guard. Since this safety is moved fore and aft instead of sideways, it is well suited for both right- and left-handed users. The bottom ejection also makes the gun well suited for both right- and left-handed users, and the fired shells do not strike bystanders during ejection.

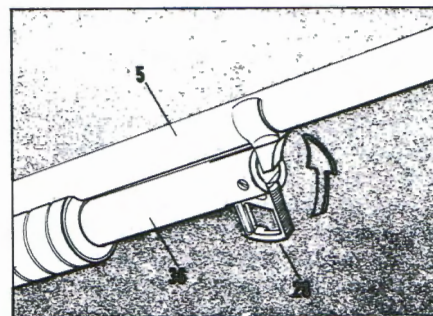
When first introduced, this gun was designated Model 1908, but this was later changed to Model 1910. Several grades with choice of various barrel lengths and chokes were offered. Ac-

cording to the Remington 1918-19 catalog, the No. 10A Standard Grade is a plain gun without checkering and engraving. Other grades are the No. 10B Special with checkered pistol grip and fore-end, No. 10S Trap Special with straight-grip stock, No. 10C Trap, No. 10D Tournament, No. 10E Expert, and No. 10F Premier. There is also a No. 10R Riot Grade with 20" barrel, and a version of this gun fitted with a hand-guard and bayonet attachment was produced for the U.S. Army during World War I. Checkering, engraving, and selected walnut are special features of the higher grades. The highest grade is the No. 10F listed at \$183.50 in the 1918-19 Remington catalog.

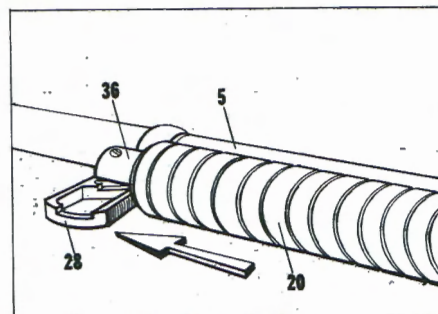
The Model 1910 was produced extensively and proved generally successful. It left something to be desired in design details, however, and was superseded in 1929 by the Remington Model 29 shotgun.



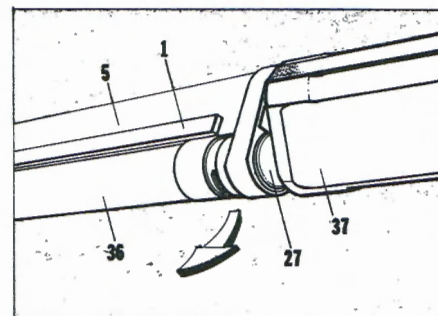
**1** Remove any shells from magazine and chamber. Press magazine lever detent (29) inward upon magazine lever (28). Magazine lever is then unlocked and can be turned crossways so it protrudes from right side of magazine tube (36).



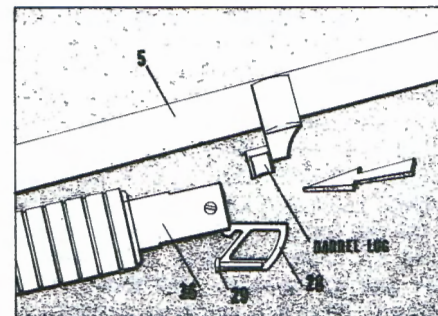
**2** Rotate magazine lever downward. This will turn magazine tube one quarter turn to unlock tube from receiver (37).



**3** With magazine lever in down position, slide magazine tube forward so that lever slot in front of tube moves forward over lug on barrel (5). Rear of magazine will then be free of receiver. Slide fore-end (20) forward until end of attached action bar (1) is free of breech-bolt (8) and receiver.

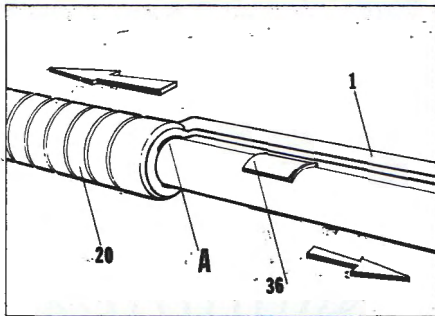


**4** Hold fore-end and magazine tube forward. Turn barrel, fore-end, and magazine tube as a complete unit one quarter turn clockwise (as viewed from rear) to disengage barrel threads from threads in receiver. Pull barrel, tube, fore-end, and action bar forward away from receiver. This is sufficient disassembly for routine cleaning and lubrication. Before reassembly of barrel to receiver, lower firing pin (17) by pulling trigger.

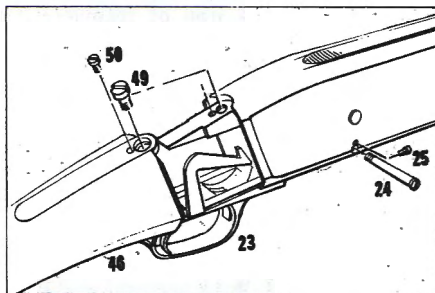


**5** Use small screwdriver to press magazine lever detent inward upon magazine lever, and turn lever free from end of magazine tube. Hold lever forward and slide tube rearward until separated from barrel lug. Then pull combined tube and fore-end forward to disengage action bar from yoke at rear of barrel.

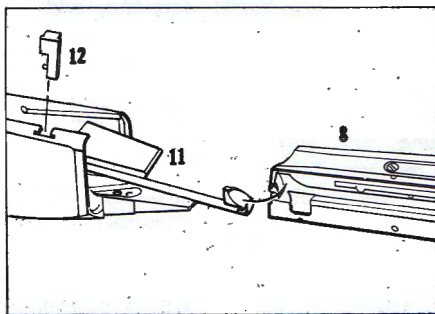




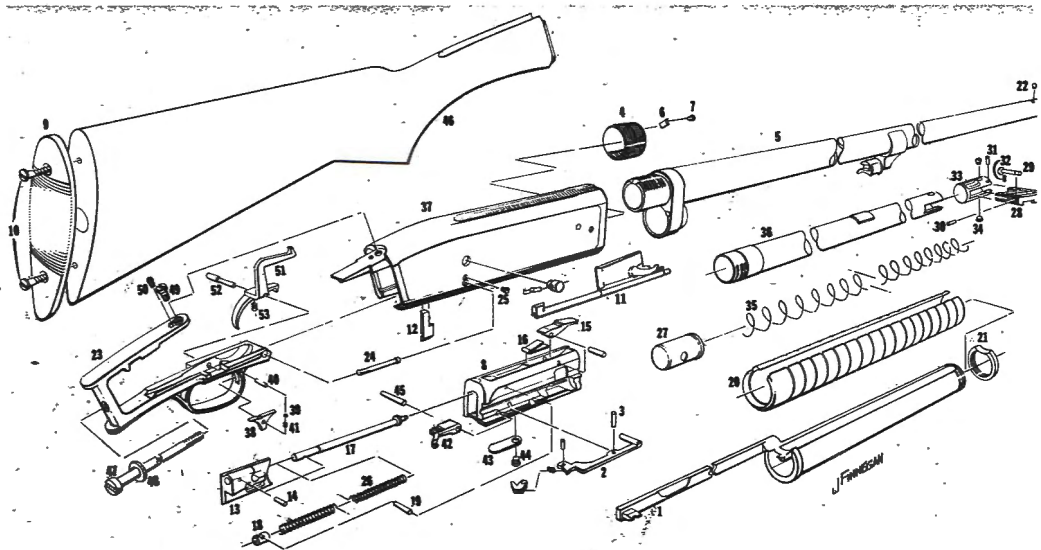
**6** Press magazine lever detent inward, and turn lever to re-engage fully into end of tube. Fore-end must be turned until lugs on tube match slots in action bar (see A). Pull action bar and fore-end forward off magazine tube.



**7** To remove guard (23) and stock (46) from receiver, unscrew guard screw check screw (25), guard screw (24), tang screw check screw (50), and tang screw (49). Pull guard and stock rearward away from receiver.

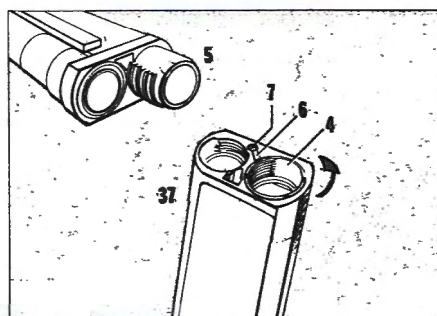


**8** Use small screwdriver to pry carrier stop (12) from bottom of receiver. While depressing action bar lock button (54), lift breechbolt (8) out of engagement with recoil shoulder, and move breechbolt rearward until it and the carrier (11) are out of receiver. Uncock firing pin by depressing sear (42), and remove sear spring screw (44) and sear spring (43). Remove sear, firing pin, and extractor (15) with spring (16) after driving out pins which retain these parts. Reassemble in reverse. In so doing, engage rear end of carrier in recess on side of breechbolt and hold these parts together while sliding them into receiver. Also, press forward on rear of carrier while inserting carrier stop.



#### PARTS LEGEND

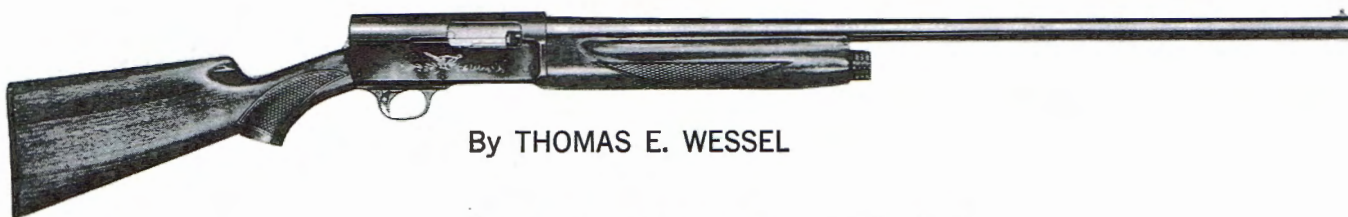
- |  |                                   |
|--|-----------------------------------|
| 1. Action bar                          | 17. Firing pin                    |
| 2. Action bar lock, complete           | 18. Firing pin bushing            |
| 3. Action bar lock pin                 | 19. Firing pin bushing pin        |
| 4. Barrel adjusting bushing            | 20. Fore-end                      |
| 5. Barrel                              | 21. Fore-end nut                  |
| 6. Barrel adjusting bushing lock       | 22. Front sight                   |
| 7. Barrel adjusting bushing lock screw | 23. Guard                         |
| 8. Breechbolt                          | 24. Guard screw                   |
| 9. Buttplate                           | 25. Guard screw check screw       |
| 10. Buttplate screws (2)               | 26. Mainspring                    |
| 11. Carrier, complete                  | 27. Magazine follower             |
| 12. Carrier stop                       | 28. Magazine lever                |
| 13. Cocking head                       | 29. Magazine lever detent         |
| 14. Cocking head pin                   | 30. Magazine lever detent pin     |
| 15. Extractor                          | 31. Magazine lever pin            |
| 16. Extractor spring                   | 32. Magazine lever spring         |
|  | 33. Magazine plug                 |
|  | 34. Magazine plug screw           |
|  | 35. Magazine spring               |
|  | 36. Magazine tube                 |
|  | 37. Receiver                      |
|  | 38. Safety slide                  |
|  | 39. Safety slide ball             |
|  | 40. Safety slide pin              |
|  | 41. Safety slide spring           |
|  | 42. Sear                          |
|  | 43. Sear spring                   |
|  | 44. Sear spring screw             |
|  | 45. Sear pin                      |
|  | 46. Stock                         |
|  | 47. Stock bolt                    |
|  | 48. Stock bolt washer             |
|  | 49. Tang screw                    |
|  | 50. Tang screw check screw        |
|  | 51. Trigger                       |
|  | 52. Trigger Pin                   |
|  | 53. Trigger spring                |
|  | 54. Action bar lock button        |
|  | 55. Action bar lock button spring |
|  | 56. Extractor pin                 |



**9** If barrel becomes loose in receiver, remove barrel and magazine assembly and unscrew barrel adjusting bushing lock screw (7) four turns. Slide barrel adjusting bushing lock (6) out of engagement with barrel adjusting bushing (4) and turn bushing slightly in direction of arrow until barrel will tighten in receiver. Qualification marks on bottom of gun should align. Slide bushing lock against corrugations in bushing, and tighten lock screw.

*Note: Many detailed design changes were made in the Model 10 over the years, and parts in some specimens may be different than those listed above.*



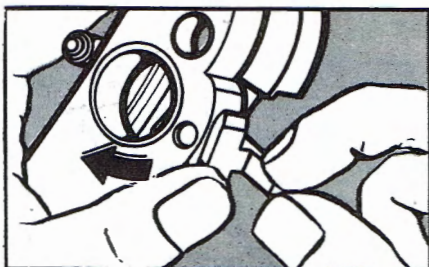


By THOMAS E. WESSEL

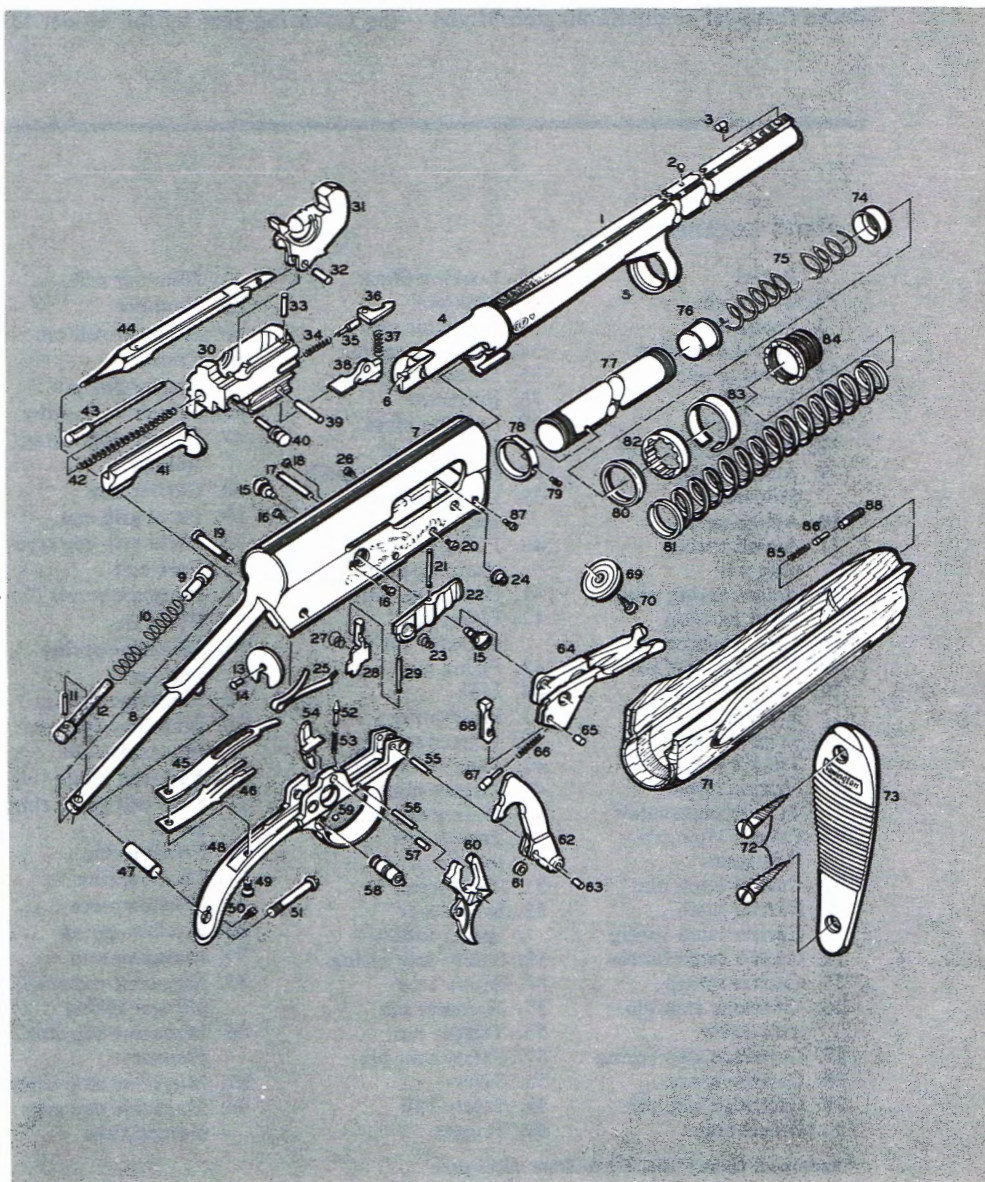
# REMINGTON MODEL 11 SHOTGUN



**1** Push barrel (1) slightly rearward into receiver (7) to relieve pressure on the fore-end (71), and unscrew magazine cap (84). Release barrel and remove fore-end and barrel from magazine tube (77). Slide friction ring (80), friction piece (82), and recoil spring (81) forward off magazine tube. Remove tang screw locking screw (50) and tang screw (51) from lower tang. Pull stock off rearward. Remove the trigger plate screw (19, right arrow). Remove trigger plate pin locking screw (18) and drift out the trigger plate pin (17, left arrow) from right to left. Lift out trigger plate (48). It is best to label each of the small locking screws as they are removed from the gun to avoid mixing them



**2** Cock the hammer (62), depress safety sear spring follower (52) as shown, and slide safety sear (54) off its stud toward the left side of the trigger plate. Remove safety sear spring follower and safety sear spring (53) from hole in top right side of trigger plate. Uncock hammer letting it forward slowly





**I**N 1900, John M. Browning was granted U. S. Patent No. 659,507 for a locked-breech, long recoil operated semi-automatic shotgun mechanism. Browning first offered this design to Winchester Repeating Arms Co., as he had done with his arms designs in previous years, but on a royalty basis instead of outright sale as had been his practice. The parties could not reach an agreement, and Browning terminated his 17-year relationship with Winchester.

At that time, no other American arms maker was in a position to produce this shotgun, so Browning went to Belgium where he arranged for its manufacture by Fabrique Nationale d'Armes de Guerre in Liege. Initial production by the FN firm was in 1903.

In 1905 Remington Arms Co. was licensed to manufacture the Browning shotgun in this country. It was introduced that year as the Remington Model

11 and was offered in 12-, 16-, and 20-ga. and in several grades with various barrel lengths and chokes.

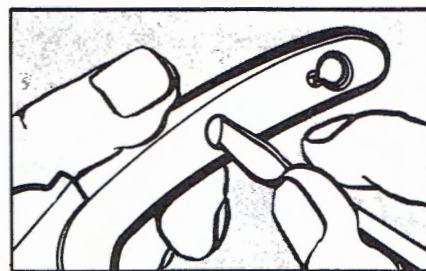
The Model 11 No. 0 Riot Grade shotgun with 18½" barrel in 12-ga. only was offered the following year.

The Model 11 Police Special with 18½" barrel in 12-ga. only was introduced in 1921. The barrel was especially bored for buckshot loads and the gun was furnished with sling swivels.

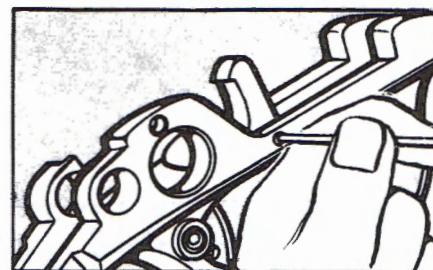
Remington's Model 11 Riot gun was also introduced in 1921. It was furnished with 20" cylinder-bored barrel in 12-, 16-, and 20-ga.

A 3-shot version of the Model 11 was introduced in 1931. Designated Sportsman Model, it was available in various barrel lengths and grades in 12-, 16-, and 20-ga.

Production of the Model 11 shotgun terminated in 1948 and was replaced the following year by the Model 11-48.



**3** Remove mainspring screw (49) from bottom of tang and lift away mainspring (45) and trigger spring (46) from slot in top of tang. Remove safety ball (59) from hole in bottom of slot just in rear of trigger (60)



**4** Drive out the hammer pin (55) and remove hammer (62) together with hammer roll (61) and attached hammer roll pin (63). Drift out the trigger pin (56) as shown and remove trigger (60). Slide out safety (58)

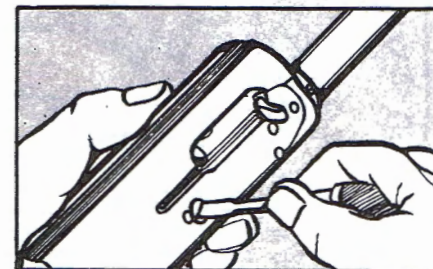
## Parts Legend

- |                                     |                                 |                                      |
|-------------------------------------|---------------------------------|--------------------------------------|
| 1. Barrel                           | 31. Locking block               | 61. Hammer roll                      |
| 2. Bead sight                       | 32. Link pin                    | 62. Hammer                           |
| 3. Front sight                      | 33. Extractor pin               | 63. Hammer roll pin                  |
| *4. Barrel extension                | 34. Extractor spring            | 64. Carrier                          |
| *5. Barrel guide                    | 35. Extractor plunger           | 65. Carrier dog pin                  |
| *6. Ejector                         | 36. Extractor                   | 66. Carrier dog spring               |
| 7. Receiver                         | 37. Locking block               | 67. Carrier dog spring follower      |
| *8. Action spring tube              | 38. Locking block latch spring  | 68. Carrier dog                      |
| 9. Action spring follower           | 39. Locking block latch pin     | 69. Pistol grip cap                  |
| 10. Action spring                   | 40. Firing pin retaining pin    | 70. Pistol grip cap screw            |
| 11. Action spring plug pin          | 41. Operating slide             | 71. Fore-end                         |
| 12. Action spring plug              | 42. Firing pin retractor spring | 72. Buttplate screw (2)              |
| *13. Fiber cushion                  | 43. Firing pin                  | 73. Buttplate                        |
| *14. Fiber cushion rivet            | 44. Link                        | 74. Magazine spring retainer         |
| 15. Carrier screw (2)               | 45. Mainspring                  | 75. Magazine spring                  |
| 16. Carrier screw locking screw (2) | 46. Trigger spring              | 76. Magazine follower                |
| 17. Trigger plate pin               | 47. Tang screw bushing          | 77. Magazine tube                    |
| 18. Trigger plate pin locking screw | 48. Trigger plate               | 78. Fore-end guide ring              |
| 19. Trigger plate screw             | 49. Mainspring screw            | 79. Fore-end guide ring screw        |
| 20. Carrier latch pin lock screw    | 50. Tang screw locking screw    | 80. Friction ring                    |
| 21. Carrier latch pin               | 51. Tang screw                  | 81. Recoil spring                    |
| 22. Carrier latch                   | 52. Safety sear spring follower | 82. Friction piece                   |
| 23. Carrier latch spring            | 53. Safety sear spring          | 83. Friction spring                  |
| 24. Carrier latch button            | 54. Safety sear                 | 84. Magazine cap                     |
| 25. Carrier spring                  | 55. Hammer pin                  | 85. Magazine cap stop plunger spring |
| 26. Cartridge stop pin lock screw   | 56. Trigger pin                 | 86. Magazine cap stop plunger        |
| 27. Cartridge stop spring           | 57. Safety sear pin             | 87. Magazine stop screw              |
| 28. Cartridge stop                  | 58. Safety                      | 88. Magazine cap stop plunger tube   |
| 29. Cartridge stop pin              | 59. Safety ball                 |                                      |
| 30. Breechbolt                      | 60. Trigger                     |                                      |

\* Permanent factory assembly to other major part

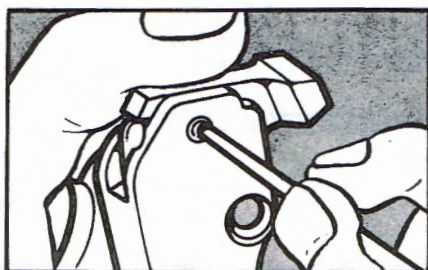


**5** Press front end of carrier spring (25) from under head of stud in left side of receiver and lift away spring

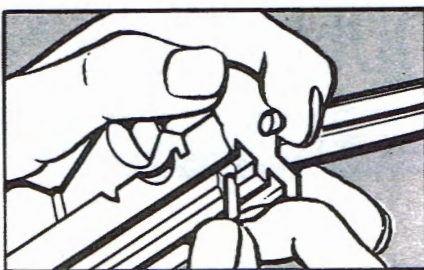


**6** Remove 2 carrier screw locking screws (16) and 2 carrier screws (15) from sides of receiver and lift carrier out of the bottom of receiver

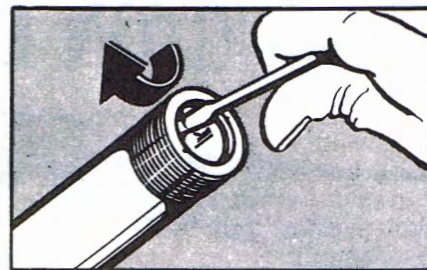




**7** Drive carrier dog pin (65) from rear of carrier, holding carrier dog (68) with thumb as shown, to prevent loss of carrier dog spring follower (67) and carrier dog spring (66). The 2 latter parts may be eased out



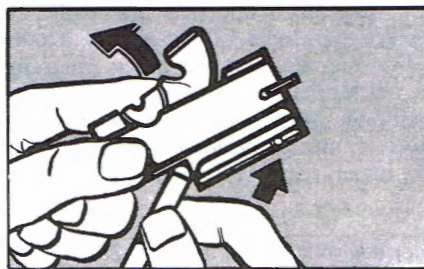
**11** Compress firing pin (43) with index finger as shown and drift out firing pin retaining pin (40) from left to right. Remove the firing pin and the firing pin retractor spring (42)



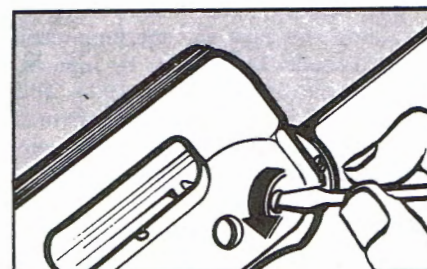
**15** Pry out magazine spring retainer (74) from front end of magazine tube (77). Do carefully to control magazine spring (75) and prevent it from flying out of tube. Remove magazine spring and slide magazine follower (76) from tube end



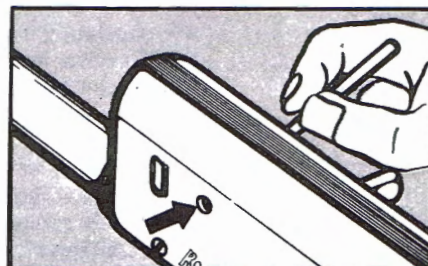
**8** Compress action spring plug (12) with thumb and push out action spring plug pin (11). Carefully release action spring (10) and remove it with action spring plug and attached action spring follower (9) from action spring tube (8)



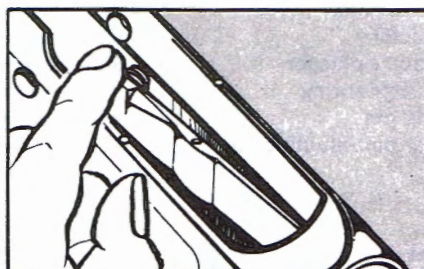
**12** Lift locking block (31) with link attached through top of breechbolt. Drive out extractor pin (33) from bottom to top, remove extractor (36), extractor plunger (35), and extractor spring (34)



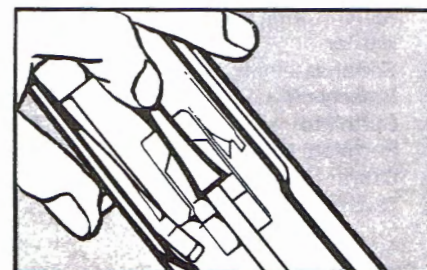
**16** Remove magazine stop screw (87) from right front side of receiver. Unscrew magazine tube



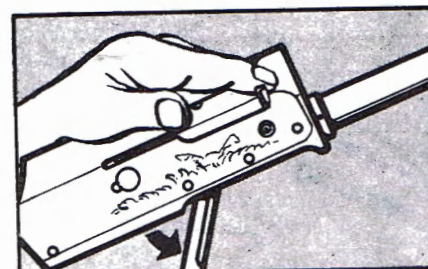
**9** Move breechbolt (30) rearward in receiver until locking block latch pin (39) in breechbolt lines up with hole in left side of receiver (arrow), opposite lower edge of ejection port. A pen flashlight will greatly aid in alignment. Drift out locking block latch pin from right side of receiver and remove locking block latch (38) and locking block latch spring (37) from bottom of breechbolt



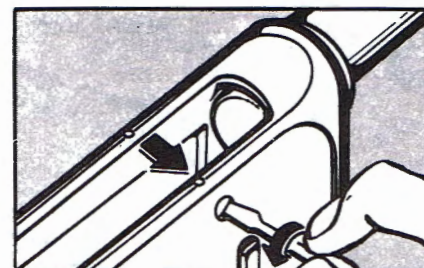
**13** Remove carrier latch pin lock screw (20) and carrier latch pin (21) from lower right edge of receiver. Remove carrier latch (22) using index finger, with carrier latch spring (23) attached. Remove carrier latch button (24)



**17** Reassemble arm in reverse order. When replacing locking block latch (38), align hole in breechbolt with hole in left side of receiver. Insert locking block latch pin (39) to hold breechbolt in place. Insert locking block latch spring (37) and locking block latch (38). Drive pin all the way in with small drift as shown



**10** Swing link (44) toward bottom of receiver, hold operating slide (41), and push breechbolt forward from receiver through barrel opening in front end of receiver. Remove operating slide through ejection port



**14** Remove cartridge stop pin lock screw (26) and cartridge stop pin (29) from lower left edge of receiver. Remove the cartridge stop (28) with the cartridge stop spring (27) attached



**18** When replacing firing pin (43) and firing pin retractor spring (42), place spring over firing pin and insert in hole at rear of breechbolt (30). Insure that indented surface of firing pin faces top of breechbolt. Compress with thumb. Insert firing pin retaining pin (40, arrow)



# REMINGTON MODEL 11-48 SHOTGUN



By JOHN F. FINNEGAN

REMINGTON has produced semi-automatic shotguns since the early part of this century. The first Remington shotgun of this type was the long-recoil operated Model 11 designed by John M. Browning and introduced in 1905. This was followed in 1931 by the Sportsman Model, a slightly modified 3-shot version of the Model 11. While the Model

11 and Sportsman were excellent guns, they were quite expensive to produce and had a square-back receiver that did not appeal to some shooters.

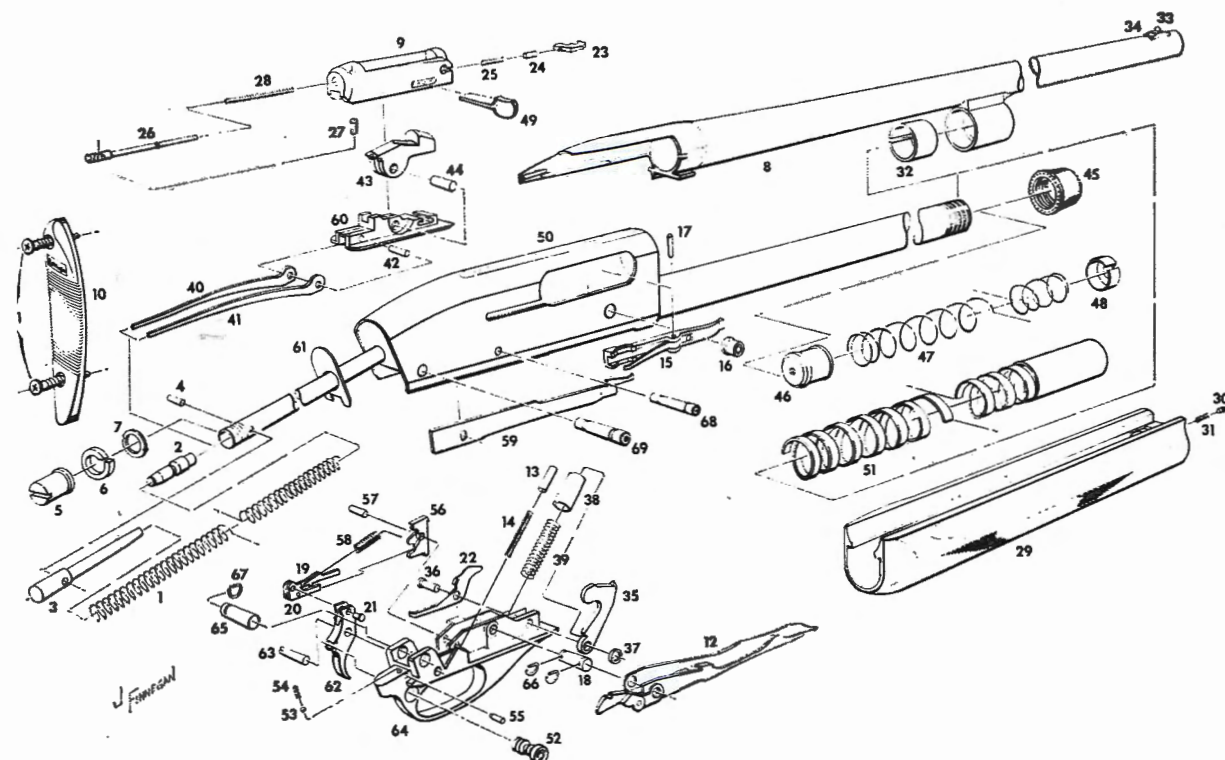
In 1949, Remington introduced a new long-recoil operated autoloader to replace the Model 11. Designated Model 11-48, the new gun was based generally on the Model 11, but was engineered to facilitate production and featured a receiver nicely rounded and sloped on the upper rear. This made for a sleek,

trim appearance.

The Model 11-48 was offered in 12-, 16-, and 20-ga. chambered for 2¾" shells, and with various barrel lengths and chokes. The magazine capacity was four shells. Later, the gun was additionally available in 28-ga. and .410 bore for skeet shooting, and a 12-ga. version equipped with rifle sights and designed for shooting slugs was offered as the "Rifled Slug Special". The Sportsman 48 version had a two-shot magazine.

## Parts Legend

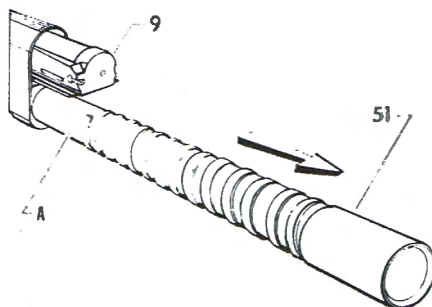
- |                                       |                                 |                                 |  |
|---------------------------------------|---------------------------------|---------------------------------|--|
| 1. Action spring                      | 14. Carrier dog follower spring | 28. Firing pin retractor spring | 42. Link pin                                   |
| 2. Action spring follower             | 15. Carrier latch assembly      | 29. Fore-end assembly           | 43. Locking block                              |
| 3. Action spring plug                 | 16. Carrier latch button        | 30. Fore-end detent             | 44. Locking block pin                          |
| 4. Action spring plug pin             | 17. Carrier latch pin           | 31. Fore-end detent spring      | 45. Magazine cap                               |
| 5. Action spring tube nut             | 18. Carrier pivot tube          | 32. Friction piece              | 46. Magazine follower                          |
| 6. Action spring tube nut lock washer | 19. Connector, left             | 33. Front sight                 | 47. Magazine spring                            |
| 7. Action spring tube nut washer      | 20. Connector, right            | 34. Front sight base            | 48. Magazine spring retainer                   |
| 8. Barrel assembly                    | 21. Connector pin               | 35. Hammer                      | 49. Operating handle                           |
| 9. Breechbolt                         | 22. Disconnecter                | 36. Hammer pin                  | 50. Receiver assembly                          |
| 10. Buttplate                         | 23. Extractor                   | 37. Hammer pin washer           | 51. Recoil spring and ring assembly            |
| 11. Buttplate screw (2)               | 24. Extractor plunger           | 38. Hammer plunger              | 52. Safety                                     |
| 12. Carrier assembly                  | 25. Extractor spring            | 39. Hammer spring               | 53. Safety detent ball                         |
| 13. Carrier dog follower              | 26. Firing pin                  | 40. Link, left                  | 54. Safety spring                              |
|                                       | 27. Firing pin retaining pin    | 41. Link, right                 | 55. Safety spring retaining pin                |
|                                       |                                 |                                 | 56. Sear                                       |
|                                       |                                 |                                 | 57. Sear pin                                   |
|                                       |                                 |                                 | 58. Sear spring                                |
|                                       |                                 |                                 | 59. Shell latch                                |
|                                       |                                 |                                 | 60. Slide                                      |
|                                       |                                 |                                 | 61. Stock bearing plate                        |
|                                       |                                 |                                 | 62. Trigger                                    |
|                                       |                                 |                                 | 63. Trigger pin                                |
|                                       |                                 |                                 | 64. Trigger plate                              |
|                                       |                                 |                                 | 65. Trigger plate pin bushing                  |
|                                       |                                 |                                 | 66. Trigger plate pin detent spring, front (2) |
|                                       |                                 |                                 | 67. Trigger plate pin detent spring, rear      |
|                                       |                                 |                                 | 68. Trigger plate pin, front                   |
|                                       |                                 |                                 | 69. Trigger plate pin, rear                    |



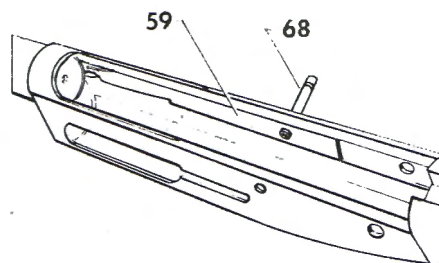


In all versions of this gun, the barrel and breechbolt are locked together during firing, and recoil as a unit. After these parts recoil the length of the shell, the barrel unlocks from the breechbolt and is returned to battery by the recoil spring. The fired shell is extracted and ejected, and a new shell is fed as the breechbolt moves forward. Rearward movement of the barrel is retarded by a friction piece that engages a ring on the front of the recoil spring. This system is self-compensating, and no adjustment is required for firing various loads.

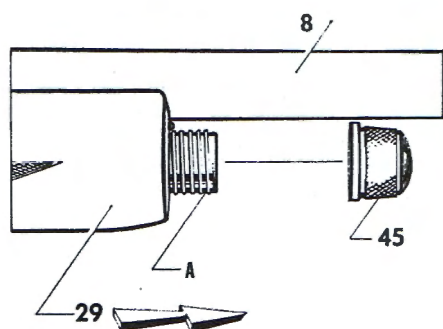
Gas-operated semi-automatic shotguns have become increasingly popular in recent years, and the Sportsman 48 was discontinued about 1960. The Model 11-48 was last listed in the 1968 catalog. (Text by Ludwig Olson).



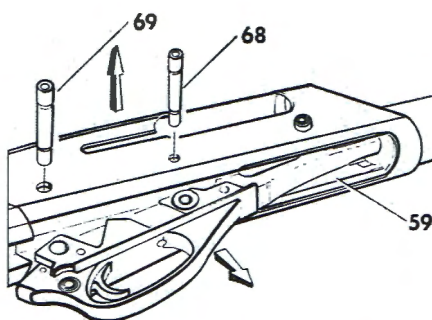
**3** Twist recoil spring clockwise, and pull recoil spring and ring assembly (51) forward off magazine tube. Pull operating handle (49) outward to disassemble from breechbolt (9). Move breechbolt with attached slide (60), locking block (43), and links (40) (41) forward out of receiver. Replace magazine cap on magazine tube for safe retention of magazine spring (47).



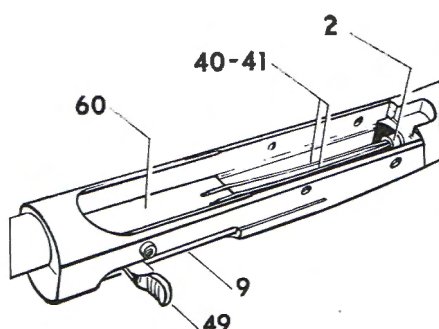
**6** Reassemble in reverse. To reassemble shell latch, locate it in channel in left of receiver. Align hole in shell latch flush with front trigger plate pin in receiver. Check to be sure that back end of disconnecter (22) is below the left connector (19). Then, position rear of trigger plate assembly in receiver, drop front into place, and insert pins.



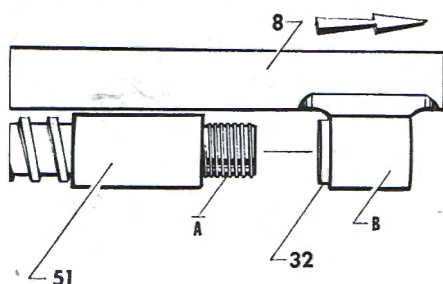
**1** Before disassembling the Model 11-48, engage safety (52) on safe by pushing to right, and unload magazine and barrel. Red band marking will not show when safety is on. Unscrew magazine cap (45) from end of magazine tube (A). Pull fore-end assembly (29) forward and remove from gun.



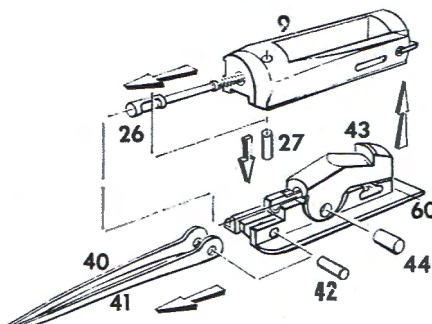
**4** Barrel assembly and breechbolt may or may not be removed from gun to take out trigger plate assembly. Close action if breechbolt is not removed. Cock hammer, engage safety on safe, and tap out trigger plate pins (68) (69). Lift out trigger plate assembly. Shell latch (59) will fall free of receiver.



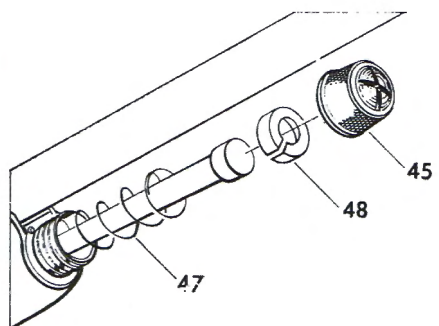
**7** Replace breechbolt assembly into receiver from the front. Align slide with channels in receiver. Push assembly rearward into receiver and locate rear of both links in action spring follower (2). Insert operating handle in handle slot in breechbolt.



**2** Pull barrel assembly (8) forward and separate from magazine tube and receiver (50). Friction piece (32) will remain in barrel guide ring (B).



**5** Lift rear of breechbolt. Tap firing pin retaining pin (27) downward and disassemble firing pin (26) and firing pin retractor spring (28) from rear of breechbolt. Lift breechbolt from slide. Tap out locking block pin (44). Lift locking block from slide. Separate links from slide after removing link pin (42).



**8** Wood plug to reduce total capacity of gun to three shots as required by Federal Migratory Bird Regulations, may be installed after removing magazine cap and prying out magazine spring retainer (48). Take care in doing this as magazine spring is under tension. Position wood plug as shown and replace parts.



# REMINGTON MODEL 12 RIFLE

Illustrations By DENNIS RIORDAN  
Text By LUDWIG OLSON

Developed by the late John D. Pedersen, a noted U.S. arms designer, the Remington Model 12 .22 rimfire slide-action rifle was introduced in 1909. This concealed-hammer repeater with tubular magazine under the barrel is of takedown style and has a crossbolt safety in the trigger guard. Its simple reliable action is trim and compact, and is closed at the rear which helps protect the user from rearward escaping gas in the event of a burst cartridge case. While normally used as a repeater, the rifle also can be loaded singly through the ejection port in the receiver.

A single locking lug integral with the upper front of the breechblock engages a shoulder in the receiver just behind the barrel. This system was used also in the Remington Model 14 slide-action

center-fire rifle designed by Pedersen.

The most often encountered Model 12 rifle is the No. 12A Standard Grade that fires .22 short, long, and long rifle cartridges interchangeably and without adjustment. This version has a 22" round barrel and weighs 4½ lbs. Its magazine holds 16 short, 12 long, or 11 long rifle cartridges. The No. 12A was also available for the .22 short only.

There are several other versions of the Model 12. The No. 12B Gallery Special Grade has a 24" octagon barrel and is chambered for the .22 short cartridge only. This rifle was used extensively by shooting galleries. The No. 12C Target Grade, similar to the No. 12B, fires shorts, longs, and long rifles.

A variation of the 12C called the No. 12C N.R.A. Target Grade was designed for use in matches sponsored by the National Rifle Association. Chambered for the .22 long rifle cartridge, this rifle has a 24" octagon barrel and weighs six lbs. It is equipped with a hooded target

front sight, aperture rear sight on the action, and a target-style sling strap.

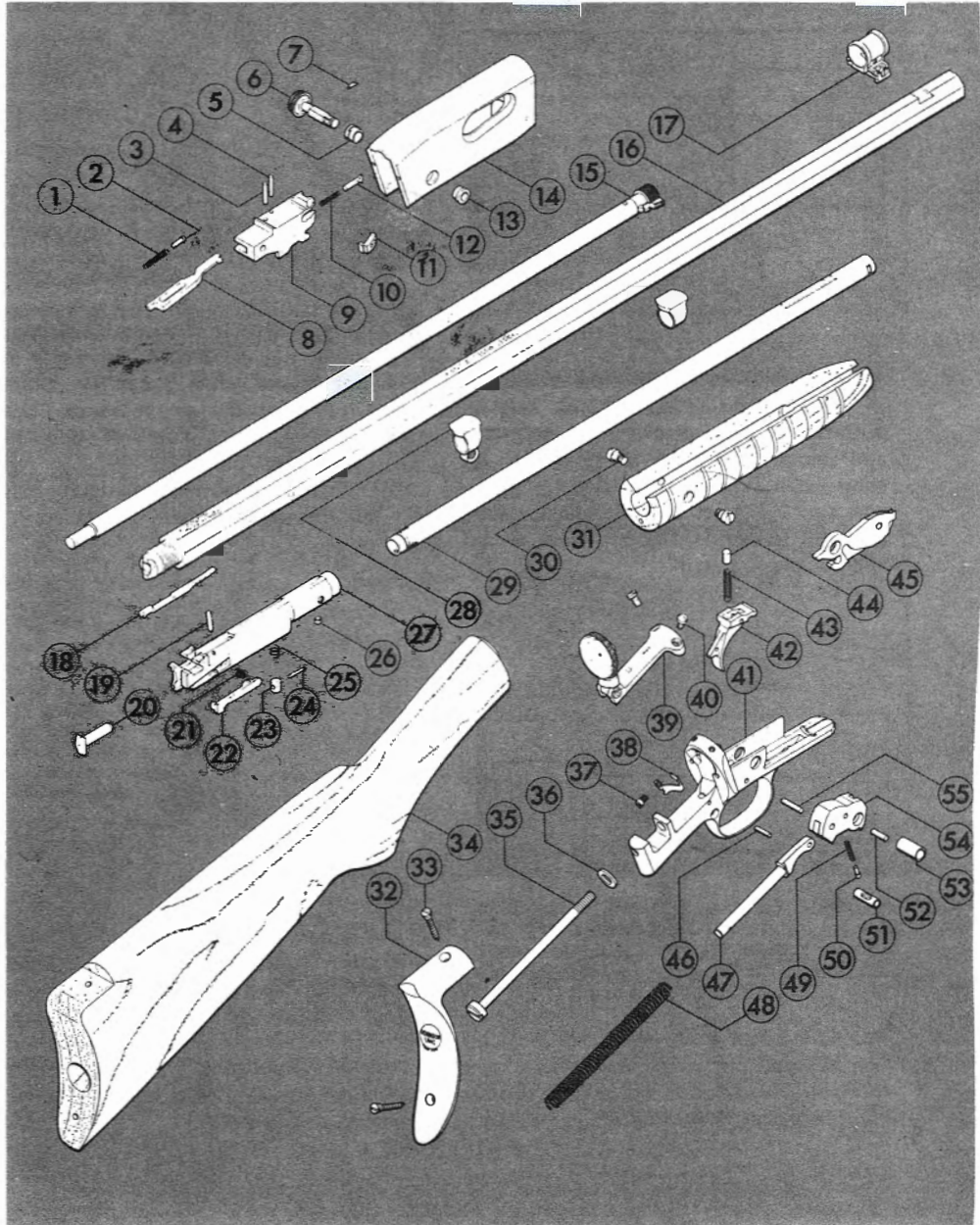
Another variation of the 12C rifle is the No. 12CS Remington Special Grade for the .22 Remington Special (.22 W.R.F.) cartridge. Like the regular No. 12C, this rifle has open sights.

Deluxe versions of the Model 12 are the No. 12D and 12DS Peerless Grade, No. 12E and 12ES Expert Grade, and the No. 12F and 12FS Premier Grade. The S in these designations denotes rifles chambered for the .22 Remington Special cartridge. Special features of these deluxe rifles are checkering, engraving, and selected wood. The highest grade is the No. 12F and 12FS, listed at \$105.50 in the 1918-19 Remington catalog.

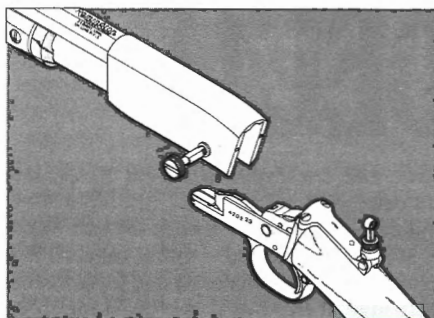
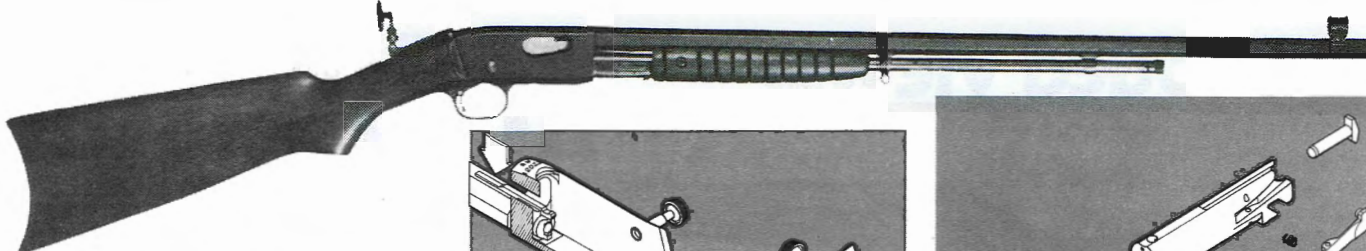
Extensively produced through the years, the Model 12 was superseded in 1936 by the Remington Model 121 rifle which was similar to the Model 12 but featured an improved firing pin, stock, and fore-end.

## Parts Legend

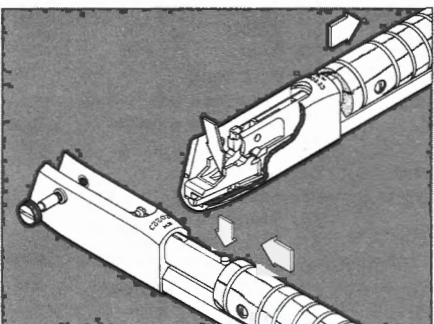
- |                                    |                          |
|------------------------------------|--------------------------|
| 1. Firing pin spring               | 26. Magazine screw       |
| 2. Firing pin spring guide         | 27. Action bar           |
| 3. Firing pin pin                  | 28. Magazine ring (2)    |
| 4. Ejector pin                     | 29. Magazine tube, outer |
| 5. Receiver bushing, plain         | 30. Fore-end screw (2)   |
| 6. Takedown screw                  | 31. Fore-end             |
| 7. Takedown screw retainer         | 32. Buttplate            |
| 8. Firing pin                      | 33. Buttplate screw (2)  |
| 9. Breechblock                     | 34. Stock                |
| 10. Extractor spring               | 35. Stock bolt           |
| 11. Extractor                      | 36. Stock bolt washer    |
| 12. Extractor plunger              | 37. Ejector spring screw |
| 13. Receiver bushing, threaded     | 38. Ejector spring       |
| 14. Receiver                       | 39. Rear sight           |
| 15. Magazine tube, inner, complete | 40. Rear sight screw (2) |
| 16. Barrel                         | 41. Guard                |
| 17. Front sight                    | 42. Trigger              |
| 18. Cartridge retainer             | 43. Trigger spring       |
| 19. Carrier dog pin                | 44. Trigger spring case  |
| 20. Cartridge stop                 | 45. Carrier              |
| 21. Carrier dog spring             | 46. Safety plunger pin   |
| 22. Carrier dog                    | 47. Mainspring rod       |
| 23. Action bar plunger             | 48. Mainspring           |
| 24. Action bar plunger pin         | 49. Safety spring        |
| 25. Action bar spring              | 50. Safety plunger       |
|                                    | 51. Safety               |
|                                    | 52. Hammer pin           |
|                                    | 53. Hammer bushing       |
|                                    | 54. Hammer               |
|                                    | 55. Trigger pin          |



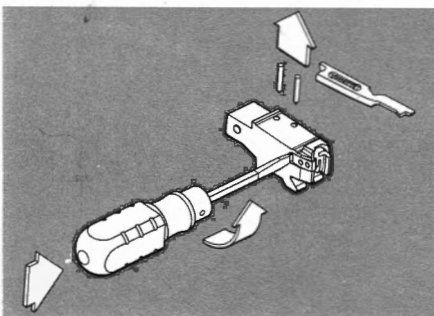




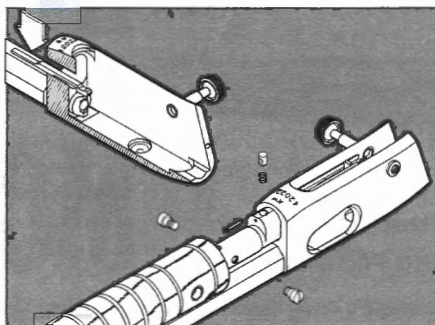
**1** Before starting disassembly, unload the magazine and clear the chamber. Loosen takedown screw (6) and pull out to left as far as it will go. Hold rifle with left side down, and pull guard and stock assembly rearward out of receiver (14).



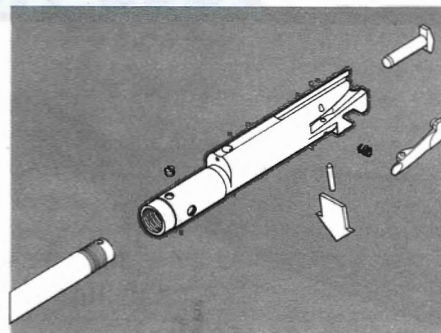
**2** Invert receiver assembly and move fore-end (31) rearward, depressing action bar plunger (23) so that it clears the receiver. Press down at center of breechblock (9) while sliding fore-end forward, and remove breechblock. This is sufficient takedown for normal cleaning. On reassembly, depress rear of breechblock to cause engagement with action bar (27). Also, cock the hammer (54).



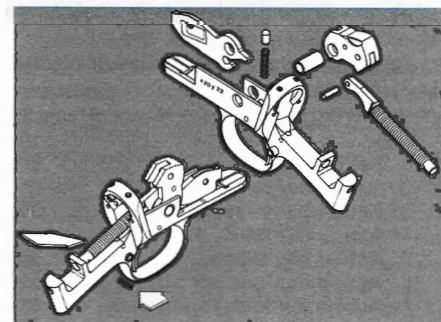
**3** To remove extractor (11), insert thin-bladed screwdriver between extractor and extractor plunger (12). Turning the blade slightly forces plunger back against spring (10), and moves rear of extractor out of breechblock. Drive ejector pin (4) and firing pin pin (3) upward to release firing pin (8).



**4** Depress latch of inner magazine tube (15) and pull tube out forward. Unscrew fore-end screws (30). Then, push fore-end (31) forward slightly over outer magazine tube (29). Depress action bar plunger and pull out its pin (24). Ease out plunger and spring (25). Pull action bar assembly out through rear of receiver, releasing fore-end and cartridge retainer (18). In reassembly, insert retainer in same position and carefully start action bar groove over it.

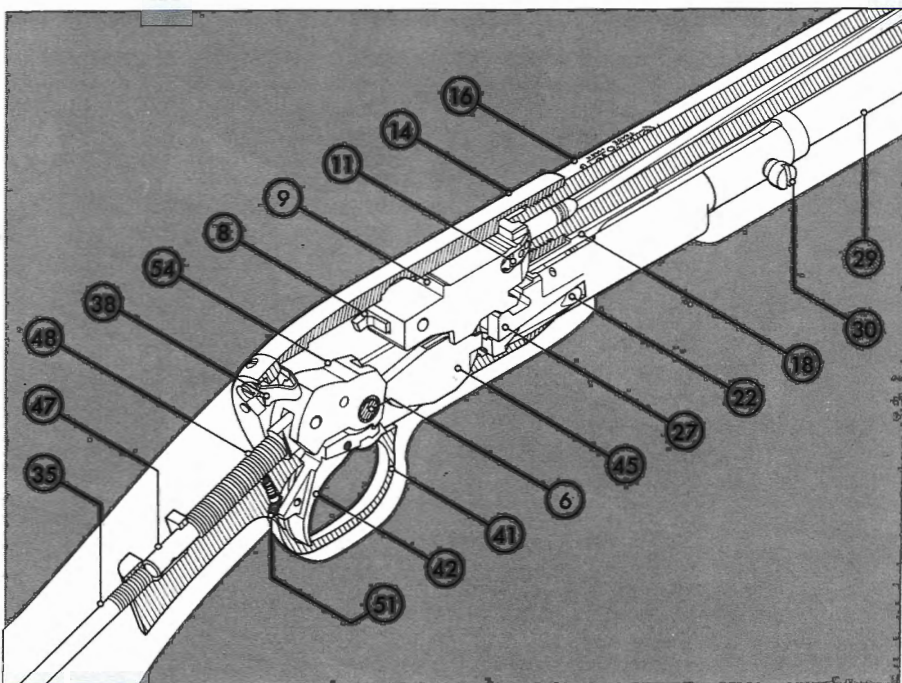


**5** Remove magazine screw (26) and unscrew outer magazine tube. Holes in magazine tube and action bar must align when the screw is replaced. Driving out carrier dog pin (19) releases carrier dog (22) and spring (21), which allows removal of cartridge stop (20).



**6** If rifle has tang rear sight (39), turn out screws (40) and remove sight. Unscrew buttplate screws (33) and take off buttplate (32). Insert long-shank screwdriver in stock hole and remove stock bolt (35) and washer (36); pull guard (41) from stock (34). Pull trigger (42) and lower hammer (54) with thumb. Force mainspring (48) forward and insert a short wire through hole in mainspring rod (47). Push out hammer bushing (53) to right and lift off hammer and rod,

pushing out hammer pin (52) to separate them. Cup palm over top of guard to catch trigger spring case (44) and spring (43). Then, pull carrier (45) forward and off. Reassemble in reverse. Safety must be disengaged when inserting hammer bushing.



Cutaway shows relationship between assembled parts. Rifle is loaded and cocked, safety off, action bar locked by carrier. Parts are number keyed to parts legend.



# EXPLODED VIEWS:

# REMINGTON

## MODEL 14



TEXT BY TECHNICAL STAFF  
DRAWINGS BY JOHN FINNEGAN,

THE Remington Model 14 and Model 14½ were among the first successful high powered pump-action rifles. Introduced in 1912, the guns were hammerless and featured a takedown design. Both models were offered in a carbine version, designated by Remington by the suffix "R."

The Model 14 and its carbine counterpart were produced in .25, .30, .32, and .35 Rem. calibers, while the 14½ versions came in .38-40 and .44-40. The rifle was offered with a half-pistol grip while the carbine had a simple straight stock. Both models were stocked with walnut.

The rear sight was step-adjustable for elevation on the Model 14 and screw-adjustable for elevation on the Model 14½.

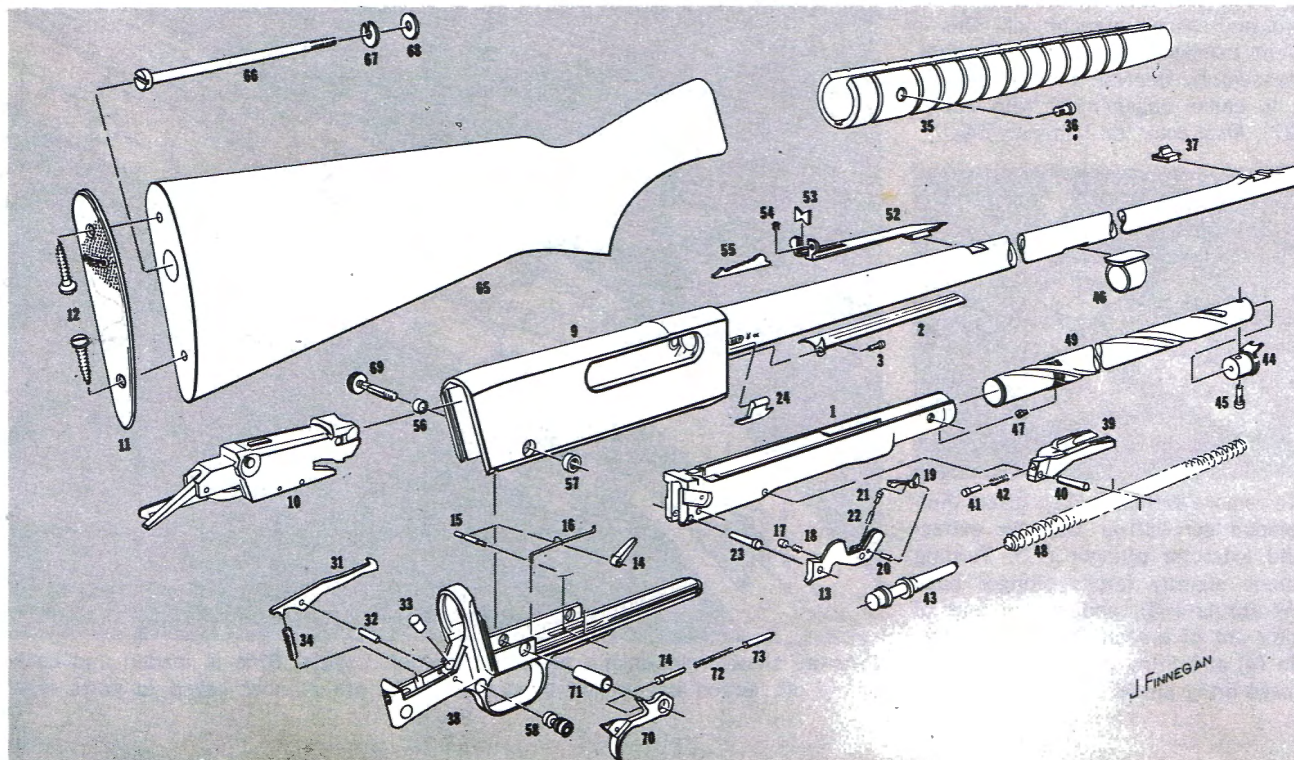
Folding notch, peep bar, and buckhorn rear sight styles were listed in the Remington catalog as extras.

One of the most significant differences between the two was in magazine design. The Model 14 featured a spiral magazine, a design that keeps the pointed bullet of one cartridge from resting on the primer of the cartridge in front of it. In the Model 14½, the flat noses of the bullets for the .38-40 and .44-40 cartridges did not call for such a device, and therefore the magazine tube was not spiraled.

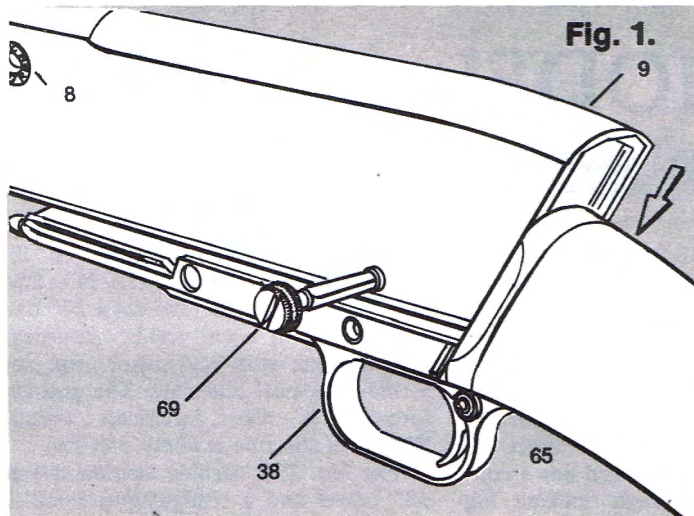
In addition to the standard grade, both models were cataloged in "Special," "Peerless," and "Premier" grades of engraving. ■

### Parts List

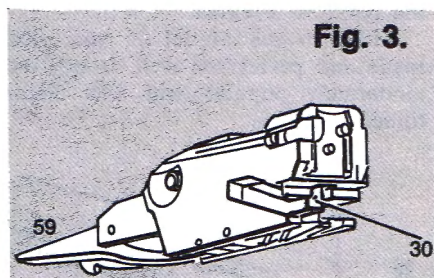
- |                                |                              |                             |                                |
|--------------------------------|------------------------------|-----------------------------|--------------------------------|
| 1. Action bar                  | 19. Carrier lever            | 38. Guard                   | 57. Receiver bushing, threaded |
| 2. Action bar cover            | 20. Carrier lever pin        | 39. Loading door            | 58. Safety                     |
| 3. Action bar cover screw      | 21. Carrier lever plunger    | 40. Loading door pin        | 59. Sear                       |
| 4. Action bar lock             | 22. Carrier lever spring     | 41. Loading door plunger    | 60. Sear lock                  |
| 5. Action bar lock pin         | 23. Carrier pin              | 42. Loading door spring     | 61. Sear lock pin              |
| 6. Action bar lock spring      | 24. Cartridge stop           | 43. Magazine follower       | 62. Sear lock plunger          |
| 7. Action bar lock spring case | 25. Ejector                  | 44. Magazine plug           | 63. Sear lock spring           |
| 8. Ammunition indicator        | 26. Ejector rod              | 45. Magazine plug screw     | 64. Sear pin                   |
| 9. Barrel & receiver           | 27. Extractor                | 46. Magazine ring           | 65. Stock                      |
| 10. Breech block               | 28. Extractor plunger        | 47. Magazine screw          | 66. Stock bolt                 |
| 11. Butt plate                 | 29. Extractor spring         | 48. Magazine spring         | 67. Stock bolt lock washer     |
| 12. Butt plate screw (2)       | 30. Firing pin & extension   | 49. Magazine tube           | 68. Stock bolt washer          |
| 13. Carrier                    | 31. Firing pin catch         | 50. Main spring             | 69. Take-down screw            |
| 14. Carrier dog                | 32. Firing pin catch pin     | 51. Main spring plug        | 70. Trigger                    |
| 15. Carrier dog pin            | 33. Firing pin catch plunger | 52. Rear sight base         | 71. Trigger bushing            |
| 16. Carrier dog spring         | 34. Firing pin catch spring  | 53. Rear sight leaf         | 72. Trigger spring             |
| 17. Carrier friction plunger   | 35. Fore-end                 | 54. Rear sight leaf screw   | 73. Trigger spring cap         |
| 18. Carrier friction spring    | 36. Fore-end screw (2)       | 55. Rear sight step         | 74. Trigger spring rod         |
|                                | 37. Front sight              | 56. Receiver bushing, plain | 75. Unlocking plunger          |







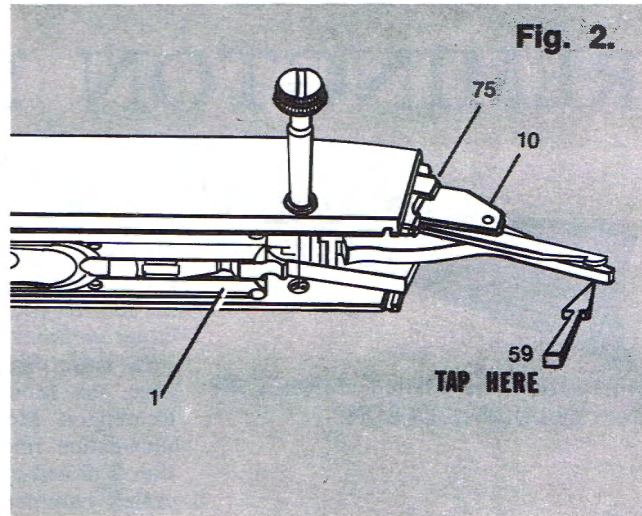
**Fig. 1.** Close action and cock rifle before takedown. Unscrew takedown screw (69) and pull screw out to bushing in receiver. Holding the barrel and receiver (9) with one hand, push the stock (65) with trigger guard (38) toward the muzzle and simultaneously slide the stock assembly away from the receiver.



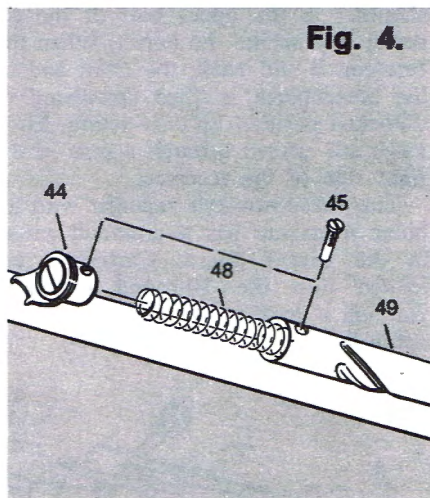
**Fig. 3.** Breech block must be recocked to reassemble action bar. Place screwdriver or similar tool against firing pin (30) shoulder which is exposed inside front of block. Press this shoulder until sear (59) within block catches and cocks firing pin. To reinstall breech block, place in receiver allowing front of block to settle in well-hole of receiver (See Fig. 2). Pull action bar (1) back against block. Then push ejector (25) forward, to allow action bar to reengage breech block, and close action.

**Fig. 6.** Drive out sear lock pin (61). Remove sear lock (60), sear lock plunger (62), and sear lock spring (63). Drive out action bar lock pin (5). Remove action bar lock (4), action bar lock spring (6), and action bar lock spring case (7). Uncock firing pin (if cocked) by gently tapping rear of sear (59). Drive out sear pin (64). Remove sear, firing pin and extension (30), main spring (50), and main spring plug (51). Slide ejector (25) rearward until small ellipse shape on ejector matches ellipse in breech block and remove ejector. Remove loose unlocking plunger (75). Gently pry between extractor (27) and extractor plunger (28) and detach extractor, extractor plunger, and extractor spring (29).

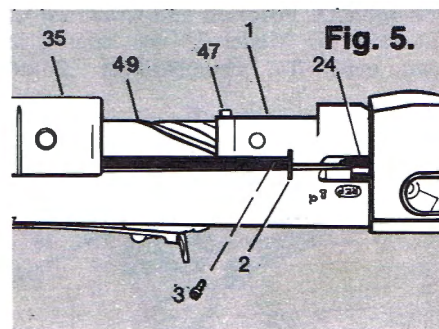
Reassemble in reverse order.



**Fig. 2.** Turn rifle upside down. Open action by pressing unlocking plunger (75) (See Fig. 6) in breech block (10) and pulling forend to rear. Tip up rear of breech block (10) which protrudes from rear of receiver. This will drop front of block into receiver well and release the action bar (1). Breech block may be uncocked by gently tapping end of sear (59). Sear protrudes from rear of block.

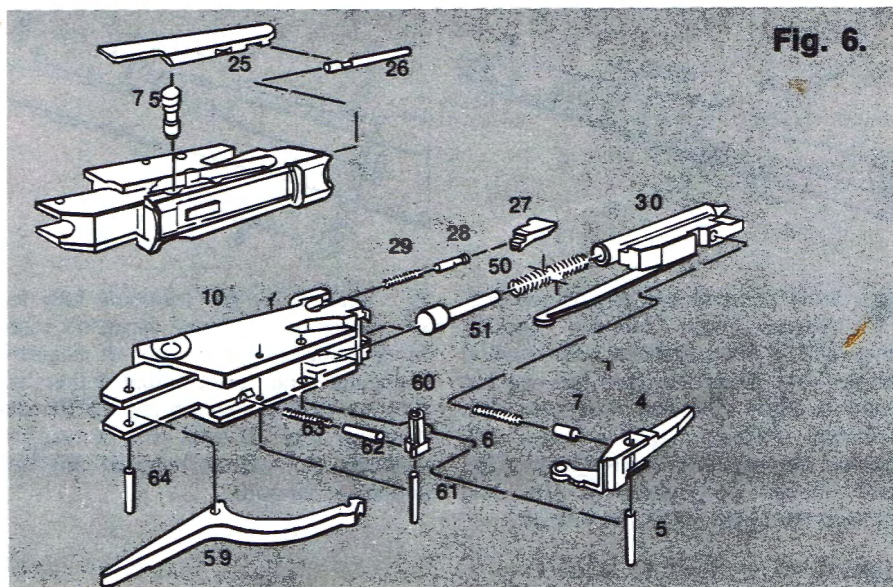


**Fig. 4.** Unscrew magazine plug screw (45). Gently pry loose and remove magazine plug (44) from front end of magazine tube (49). Pull out magazine spring (48) and attached magazine follower from tube. Detach magazine spring from follower.



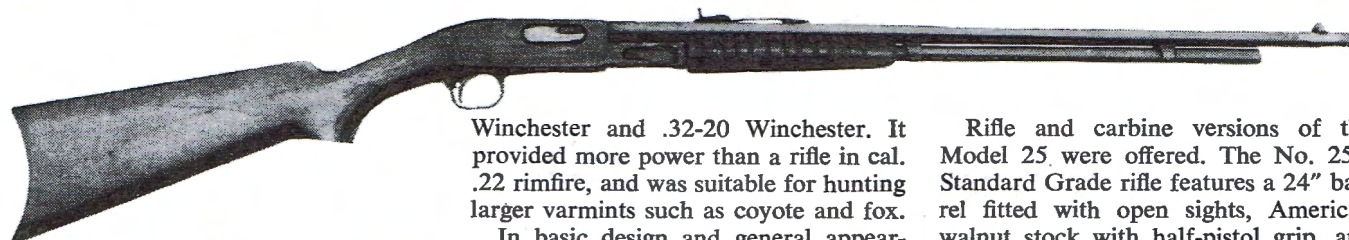
**Fig. 5.** Unscrew forend screw (36) from each side. Slide forend (35) to front of magazine tube (49). Unscrew action bar cover screw (3) and slide action bar cover (2) forward and disengage from bar. Re-

move loosened cartridge stop (24) located in front end of receiver. Slide action bar (1) with attached magazine tube (49) rearward in receiver. Pull forend from end of tube and remove action bar and tube from rear of receiver. Unscrew magazine screw (47) at bottom of bar. Screw out magazine tube from bar.





# REMINGTON MODEL 25 RIFLE



Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

WHEN the Remington Model 25 slide-action repeating rifle was introduced in 1923, its manufacturer stated: "Sportsmen, trappers and farmers will be quick to appreciate the great range of usefulness offered by this new Remington rifle. Just the rifle for real sport, and for use in extermination of pests. Just the rifle for the trap line, too."

Based on the patents of arms designers John D. Pedersen and Crawford C. Loomis, the Model 25 was offered in two center-fire chamberings: .25-20

Winchester and .32-20 Winchester. It provided more power than a rifle in cal. .22 rimfire, and was suitable for hunting larger varmints such as coyote and fox.

In basic design and general appearance, the Model 25 is similar to the Remington Model 12 and Model 14 slide-action rifles. Its trim compact action is closed at the rear and has a concealed hammer. A single locking lug integral with the breechblock engages a shoulder in the upper part of the receiver just behind the barrel. When the fore-end is slid back, the front end of the breechblock is tilted downward to unlocked position by cam action. Fired cases are ejected through a port in the right side of the receiver.

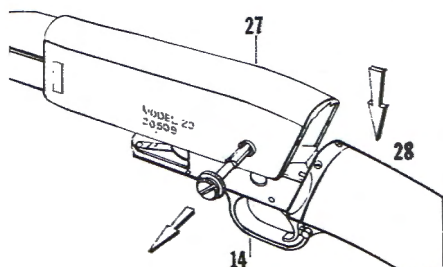
This takedown-style repeater with tubular magazine has a crossbolt safety in the trigger guard. Cartridges are loaded into the 10-round magazine through a door on the right side of the action bar.

Rifle and carbine versions of the Model 25 were offered. The No. 25A Standard Grade rifle features a 24" barrel fitted with open sights, American walnut stock with half-pistol grip, and a rifle-style steel buttplate. The grooved fore-end is also American walnut. Weight of the rifle is about 5½ lbs.

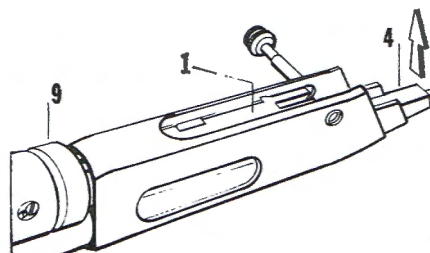
The No. 25R carbine version has an 18" barrel and a straight-grip stock. It was described by the manufacturer as "an excellent arm for saddle and automobile use. Light, compact—quick and easy to handle."

There were also higher grades of the Model 25 rifle with checkered grip and fore-end of selected walnut, engraving on action and barrel, and hand-polished working parts. The highest grade was the No. 25F Premier.

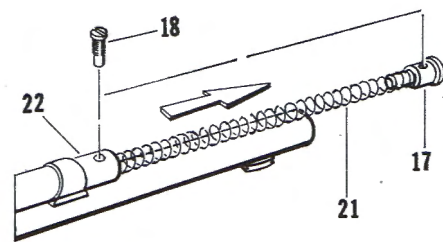
Although the Model 25 was nicely made and performed well, it was only moderately popular and was discontinued in 1936.



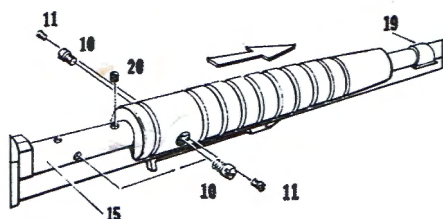
**1** Before disassembling the rifle, make sure it is unloaded. Slide fore-end (9) to the rear and forward to cock action. Then, unscrew takedown screw and pull out from receiver assembly (27) as far as possible. Remove stock (28) and guard assembly (14) from receiver.



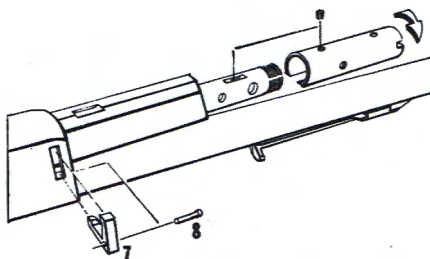
**2** Slide fore-end rearward until breechblock assembly (4) protrudes from rear of receiver. Lift rear end of breechblock upward and slide fore-end forward. This will separate action bar assembly (1) from breechblock. Remove breechblock assembly from receiver.



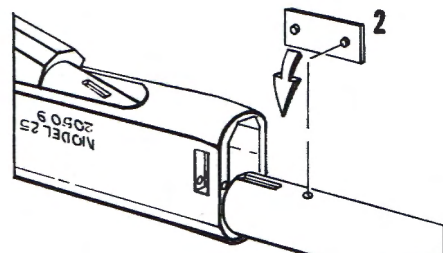
**3** Unscrew magazine plug screw (18). Remove magazine plug (17) from front end of magazine tube (22). Also remove magazine follower (16) and magazine spring (21). Disassemble magazine spring from magazine plug and follower.



**4** Slide fore-end rearward to receiver. Unscrew both fore-end locking screws (11). Then, unscrew both fore-end screws (10). Slide loosened fore-end forward to clear magazine connector (15). Unscrew exposed magazine screw (20) nearest fore-end. Turn out magazine tube, pull through magazine rings (19), and remove from gun. Slide fore-end off.



**5** Slide action bar assembly fully forward, and unscrew magazine screw in magazine connector. Turn off magazine connector, and remove from action bar. Unscrew cartridge stop screw (8). Remove cartridge stop (7) from side of receiver. Cartridge stop can be removed only with action bar forward.

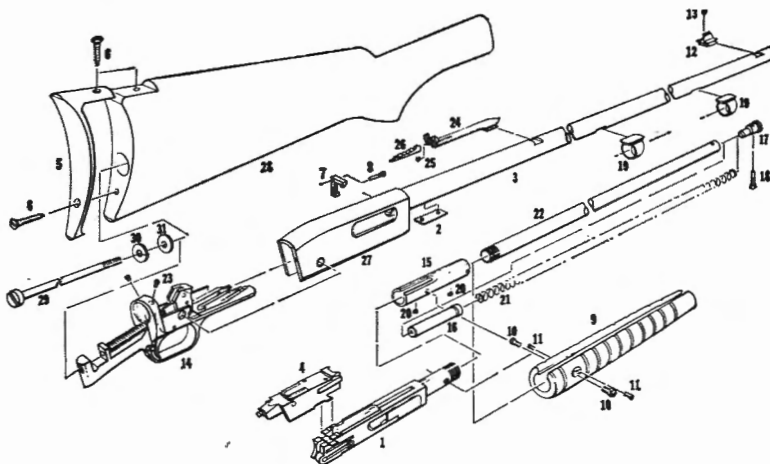


**6** Pull action bar assembly rearward until bar can be disassembled from receiver. Lift action bar cover (2) from barrel.

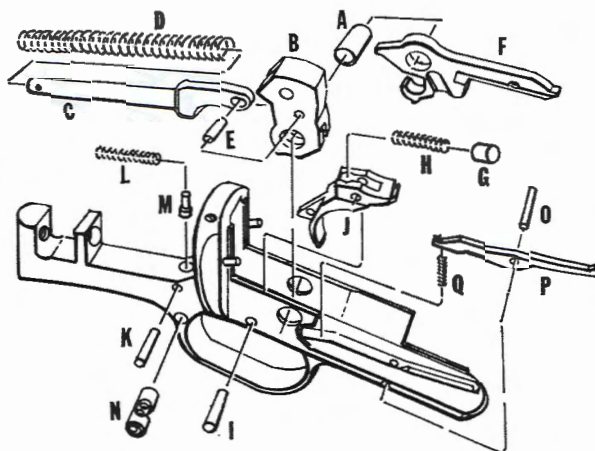


## PARTS LEGEND

- |                                |                         |                            |                            |
|--------------------------------|-------------------------|----------------------------|----------------------------|
| 1. Action bar assembly         | 17. Magazine plug       | 22. Magazine tube          | 27. Receiver assembly      |
| 2. Action bar cover            | 18. Magazine plug screw | 23. Plug screw (2)         | 28. Stock                  |
| 3. Barrel                      | 19. Magazine ring (2)   | 24. Rear sight             | 29. Stock bolt             |
| 4. Breechblock assembly        | 20. Magazine screw (2)  | 25. Rear sight slide screw | 30. Stock bolt lock washer |
| 5. Buttplate                   | 21. Magazine spring     | 26. Rear sight step        | 31. Stock bolt washer      |
| 6. Buttplate screw (2)         |                         |                            |                            |
| 7. Cartridge stop              |                         |                            |                            |
| 8. Cartridge stop screw        |                         |                            |                            |
| 9. Fore-end                    |                         |                            |                            |
| 10. Fore-end screw (2)         |                         |                            |                            |
| 11. Fore-end locking screw (2) |                         |                            |                            |
| 12. Front sight                |                         |                            |                            |
| 13. Front sight lock screw     |                         |                            |                            |
| 14. Guard assembly             |                         |                            |                            |
| 15. Magazine connector         |                         |                            |                            |
| 16. Magazine follower          |                         |                            |                            |



**7** Hold hammer (B), pull trigger (J), and ease hammer forward. Force rear end of mainspring (D) forward and insert small pin through hole in end of mainspring rod (C) to hold mainspring forward on rod. Drive out hammer bushing (A). Remove hammer with mainspring rod and mainspring attached. Pull out small pin and remove mainspring from mainspring rod. Drive out hammer pin (E) to disassemble hammer from mainspring rod. Remove carrier (F), trigger spring case (G), and trigger spring (H). Drive out trigger pin (I), and remove trigger. Drive out safety plunger pin (K), and remove safety spring (L), safety plunger (M), and safety (N). Drive out timing lever pin (O), and remove timing lever (P) and spring (Q).



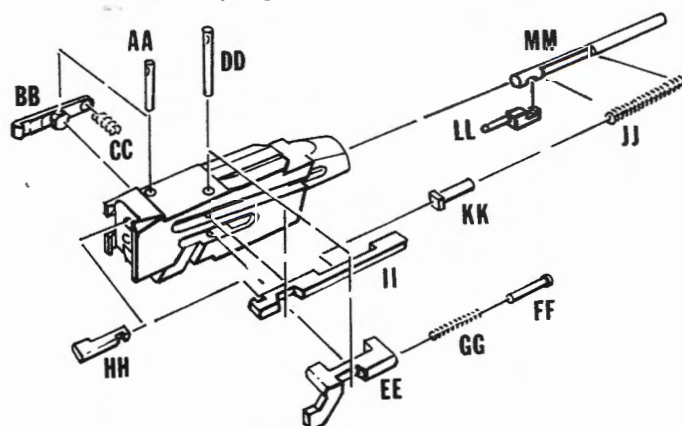
## Guard Assembly

- |                        |
|------------------------|
| A. Hammer bushing      |
| B. Hammer              |
| C. Mainspring rod      |
| D. Mainspring          |
| E. Hammer pin          |
| F. Carrier             |
| G. Trigger spring case |
| H. Trigger spring      |
| I. Trigger pin         |
| J. Trigger             |
| K. Safety plunger pin  |
| L. Safety spring       |
| M. Safety plunger      |
| N. Safety              |
| O. Timing lever pin    |
| P. Timing lever        |
| Q. Timing lever spring |

**8** Drive out extractor pin (AA), and remove extractor (BB) and extractor spring (CC). Drive out ejector pin (DD). Remove retractor (EE), retractor plunger (FF), and retractor spring (GG). Then, remove ejector (HH), ejector rod (II), firing pin spring (JJ), and firing pin spring guide (KK). Pull back and disassemble firing pin, rear (MM), and firing pin, front (LL).

## Breechblock Assembly

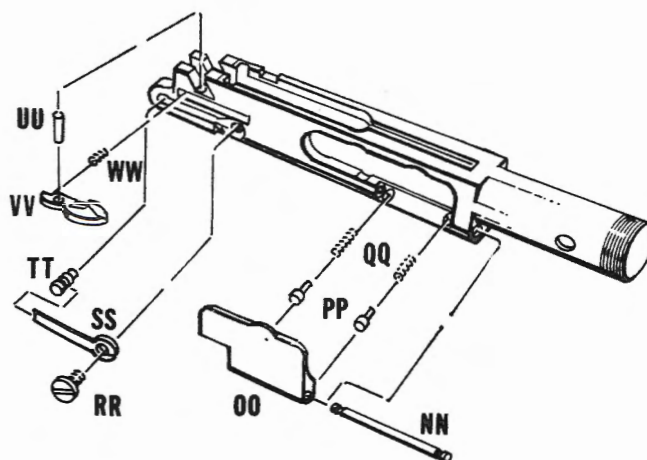
- |                       |                             |
|-----------------------|-----------------------------|
| AA. Extractor pin     | GG. Retractor spring        |
| BB. Extractor         | HH. Ejector                 |
| CC. Extractor spring  | II. Ejector rod             |
| DD. Ejector pin       | JJ. Firing pin spring       |
| EE. Retractor         | KK. Firing pin spring guide |
| FF. Retractor plunger | LL. Firing pin, front       |
|                       | MM. Firing Pin, rear        |



**9** Pull out loading door pin (NN) from front of action bar assembly, and remove loading door (OO). Remove the two loading door plungers (PP) and springs (QQ). Unscrew carrier dog screw (RR) and remove spring (SS) and dog (TT). Drive out cartridge dog pin (UU). Remove cartridge dog (VV) and cartridge dog spring (WW). Assemble in reverse order.

## Action Bar Assembly

- |                              |                              |
|------------------------------|------------------------------|
| NN. Loading door pin         | RR. Carrier dog spring screw |
| OO. Loading door             | SS. Carrier dog spring       |
| PP. Loading door plunger (2) | TT. Carrier dog              |
| QQ. Loading door spring (2)  | UU. Cartridge dog pin        |
|                              | VV. Cartridge dog            |
|                              | WW. Cartridge dog spring     |







# REMINGTON MODEL 30

Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

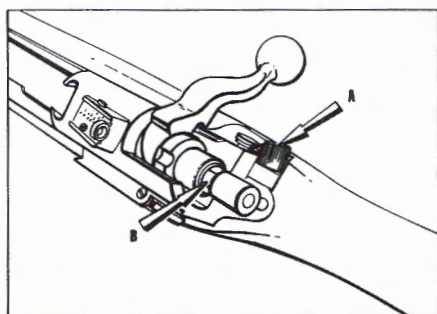
**B**OLT-ACTION repeating rifles were introduced in the U.S. many years before the turn of the century. However, most American sportsmen were accustomed to lever-action rifles and the bolt-action lacked popularity. This situation changed to a

considerable extent during World War I when thousands of U.S. soldiers became familiar with Springfield and Enfield bolt-action rifles and acquired a liking for them. The result was a good market for bolt-action sporting rifles following the war.

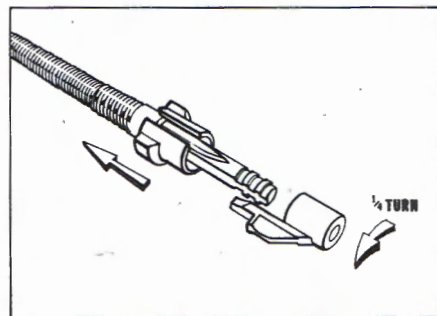
Remington's entry in the bolt-action field to exploit this market was its Model 30 center-fire sporting rifle introduced in 1921. This Mauser-type rifle had a mod-

ified Enfield action generally similar to that of the U.S. Model 1917 Enfield rifle. It was produced on machinery used by Remington during the war to manufacture the Model 1917 Enfield for the Government, and was first offered in cal. .30-'06 only.

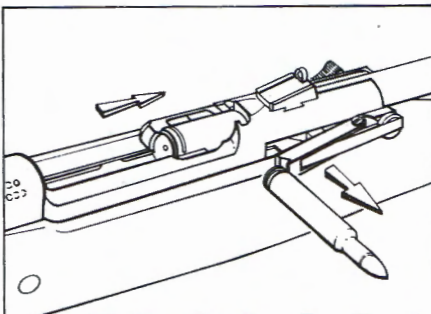
The Model 30 had a one-piece bolt with dual-opposed locking lugs at the front end. A safety lug was provided by the bolt handle which entered a notch in the re-



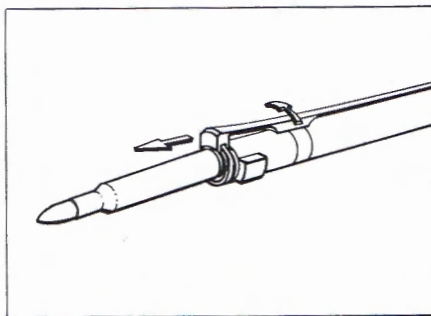
**1** Open bolt (2), and inspect chamber and magazine to make sure that rifle is unloaded. Rotate safety catch (43) to the rear safe position "A", and close bolt as far as possible. Safety catch engaging cocking piece (10) will cause separation to occur at "B". Insert washer or coin between cocking piece and bolt plug (3), and raise bolt handle.



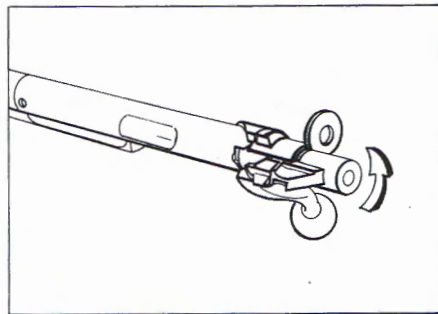
**4** Press point of firing pin (14) against a wood surface. Push on bolt plug until it clears nose of cocking piece, rotate cocking piece  $\frac{1}{4}$  turn in either direction, and pull it rearward off firing pin. Ease bolt plug to rear slowly, and separate it and the mainspring (32) from firing pin. Hold bolt plug firmly, and keep it pointed in a safe direction as it is under heavy pressure of mainspring.



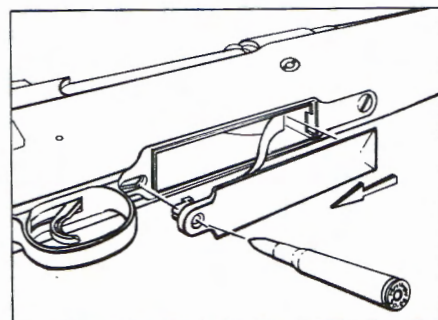
**2** Rotate safety catch forward to fire position. Pivot bolt stop (4) to the left, and pull bolt assembly rearward out of receiver (42). Cartridge used as shown assists in pivoting bolt stop to left.



**5** Rotate extractor (12) until it rests on ungrooved portion of bolt head between locking lugs. Position cartridge rim under extractor hook, and use cartridge to pull extractor forward off bolt. It is not advisable to remove extractor ring (13) as doing so may deform it.



**3** With washer or coin between cocking piece and bolt plug, unscrew firing mechanism from bolt.



**6** While using bullet point or pointed tool to depress magazine catch (26), slide magazine bottom (25) slightly rearward until it disengages from trigger guard (55). Remove magazine bottom with attached parts, and slide magazine follower spring (30) out of engagement with magazine bottom and magazine follower (29). Use screwdriver to remove front guard screw (20) and rear guard screw (33). Pull out trigger guard and magazine (24), and separate stock (49) from receiver and barrel (1). Reassemble in reverse.



ceiver. The long, non-rotary extractor was fastened to the bolt by the extractor ring, and the spring-actuated ejector was pivoted in the left side of the receiver. Due to the low lift of the bent-back bolt handle and position of the safety on the right side of the receiver, the rifle was well suited for use with a low-mounted telescope sight.

Capacity of the staggered-column box magazine was five rounds inserted from the top singly or by means of a five-round clip. The magazine was not detachable although the magazine bottom, spring and follower could be removed easily for cleaning.

The first version of this rifle was cocked chiefly while closing the bolt as with the Model 1917 Enfield, and featured a small adjustable aperture rear sight on the receiver bridge. In 1926, the action was modified to cock chiefly while opening the bolt, and the aperture rear sight was discontinued. The new version, called the Model 30 Express rifle, had an open rear

sight on the barrel, but the receiver was drilled and tapped for the Lyman No. 48R aperture receiver sight. In addition to cal. 30-'06, the new rifle was offered in .25, .30, .32 and .35 Remington rimless chamberings. The barrel was 22" long, and the rifle weighed approximately 7 1/4 lbs.

A further change occurred in 1930 with introduction of the Model 30S "Special" Grade rifle in calibers .30-'06 and 7 mm. Mauser with 24" barrel, and cal. .25 Remington with 22" barrel. An NRA-style American walnut stock with checkered pistol grip and fore-end was an important feature of the Model 30S. It was much better proportioned than stocks of earlier Model 30 rifles. Other important features were a Lyman No. 48R aperture rear sight and a two-stage trigger mechanism designed to give a light, clean final pull. A single-stage trigger was optional. An open rear sight was not provided except on the 30SX "Special" Grade which had no receiver sight. The list of chamberings for later Model 30S rifles included

.30-'06 and .257 Roberts only.

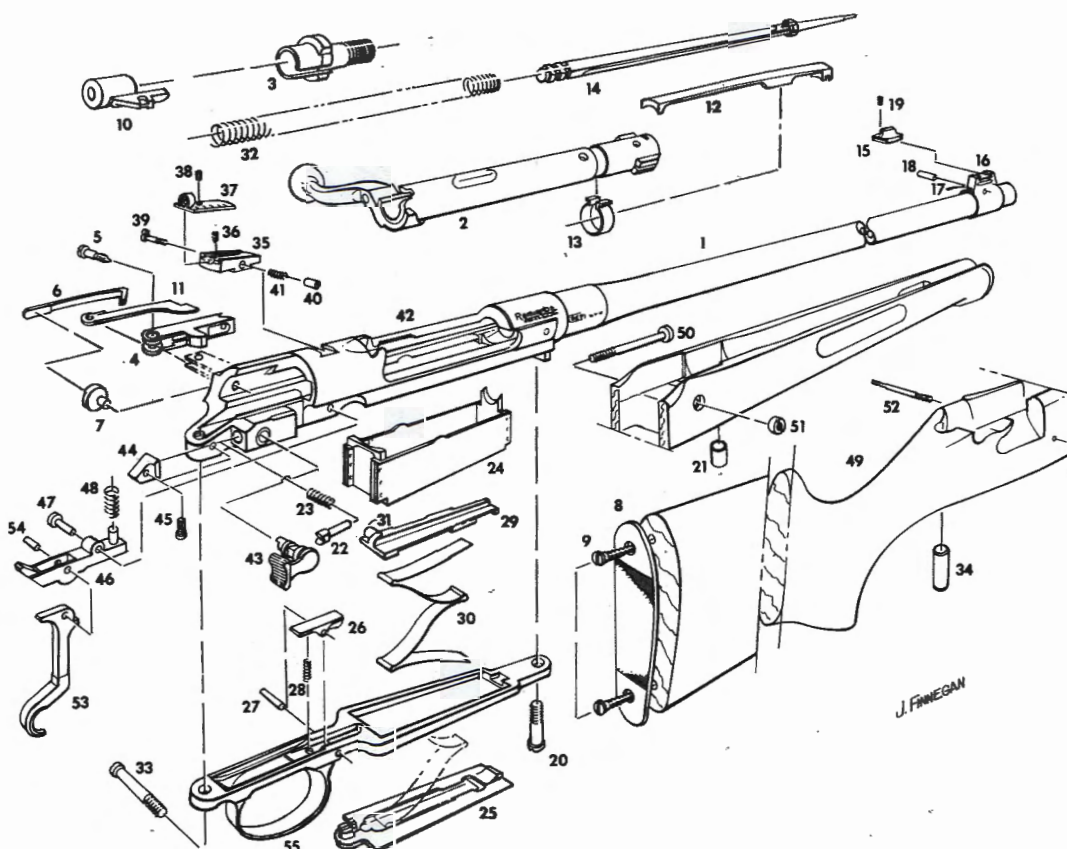
Two other versions of the Model 30 were the Model 30A "Standard" Grade rifle and Model 30R carbine. The Model 30A had a 22" barrel, and was available in cal. .30-'06, 7 mm. Mauser and the four Remington rimless chamberings. It featured an open rear sight, single-stage trigger and a walnut stock generally similar to that of earlier Model 30 rifles that preceded the 30S. A later version of the Model 30A was available in cal. .30-'06 only.

The Model 30R carbine had a 20" barrel, an uncheckered stock, and was offered in cal. .30-'06 only. According to Remington, it was intended for use by forest rangers, guards or state police.

The Model 30 was a high-quality arm with a well-designed action. It had an advantage over many other bolt-action rifles in that its bolt handle and safety offered no interference with a low-mounted telescope sight. In 1941, this rifle was superseded by the Remington Model 720. ■

## Parts Legend

1. Barrel
2. Bolt
3. Bolt plug
4. Bolt stop
5. Bolt stop axis screw
6. Bolt stop spring
7. Bolt stop spring rest
8. Buttplate
9. Buttplate screw (2)
10. Cocking piece
11. Ejector
12. Extractor
13. Extractor ring
14. Firing pin
15. Front sight
16. Front sight band block
17. Front sight band block fixing key
18. Front sight band block fixing pin
19. Front sight screw
20. Front guard screw
21. Front guard screw collar
22. Locking bolt
23. Locking bolt spring
24. Magazine
25. Magazine bottom
26. Magazine catch
27. Magazine catch pin
28. Magazine catch spring
29. Magazine follower
30. Magazine follower spring
31. Magazine follower stop pin
32. Mainspring
33. Rear guard screw
34. Rear guard screw collar
35. Rear sight base
36. Rear sight base lock screw



37. Rear sight slide
38. Rear sight slide screw
39. Rear sight adjustment lock
40. Rear sight adjustment lock screw
41. Rear sight adjustment lock spring
42. Receiver
43. Safety catch
44. Safety hole plug
45. Safety hole plug screw
46. Sear

47. Sear axis pin
48. Sear spring
49. Stock
50. Stock bolt
51. Stock bolt nut
52. Stock pin
53. Trigger
54. Trigger axis pin
55. Trigger guard



# REMINGTON MODEL 31 SHOTGUN



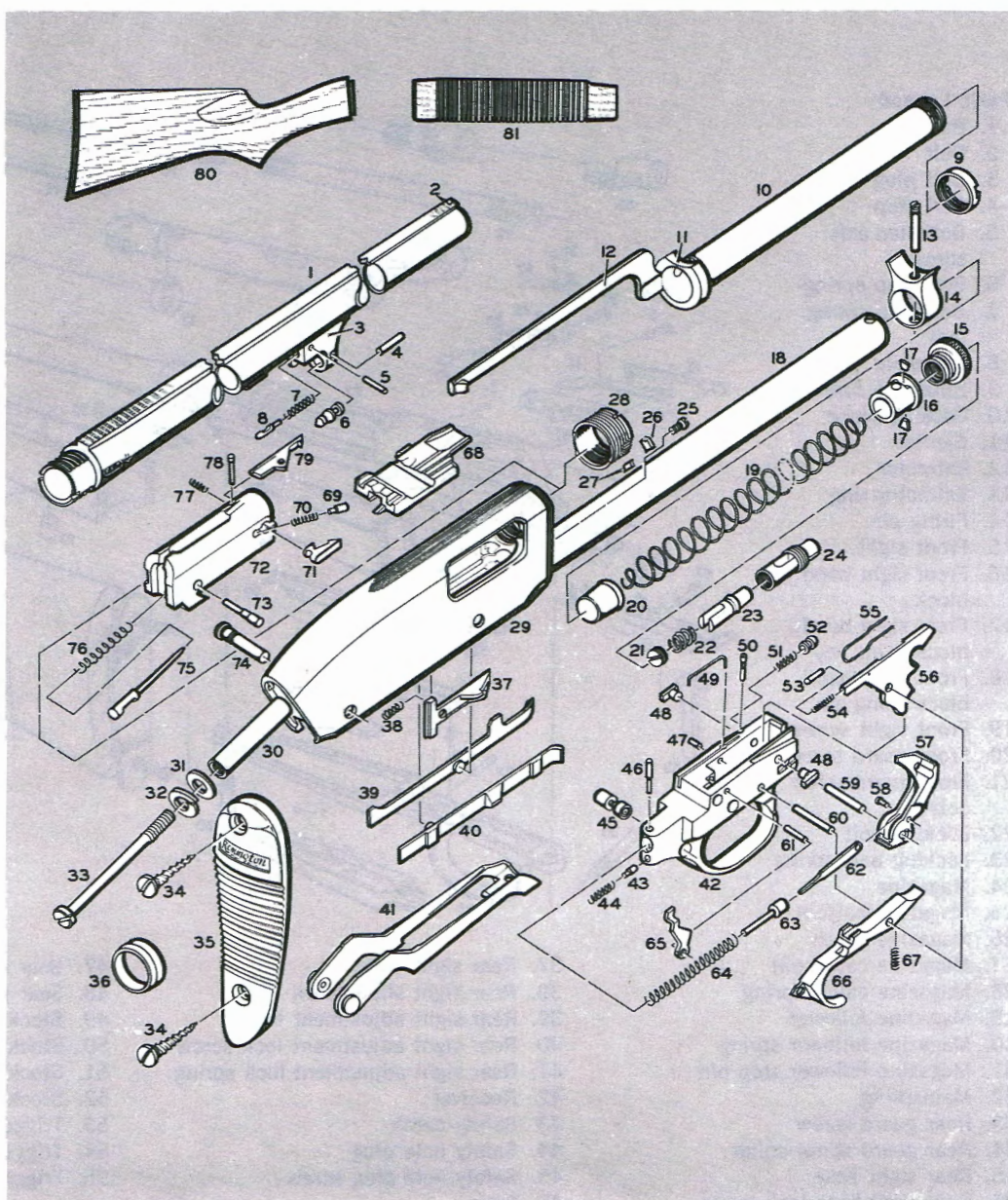
By THOMAS E. WESSEL

## Parts Legend

- |   |                            |   |                              |
|---|----------------------------|---|------------------------------|
| 1. Barrel                               | 53. Trigger lock plunger   | 63. Mainspring follower                           | 72. Breechblock              |
| 2. Front sight*                         | 54. Trigger lock spring    | 64. Mainspring                                    | 73. Firing pin retaining pin |
| 3. Barrel lug*                          | 55. Action bar lock spring | 65. Trigger lock (shown 120° rotated for clarity) | 74. Trigger plate pin        |
| 4. Barrel lug stud pin                  | 56. Action bar lock        | 66. Trigger                                       | 75. Firing pin               |
| 5. Barrel lock nut stop plunger pin     | 57. Hammer                 | 67. Trigger spring                                | 76. Firing pin spring        |
| 6. Barrel lug stud                      | 58. Hammer link pin        | 68. Slide   | 77. Left extractor spring    |
| 7. Barrel lock nut stop plunger spring  | 59. Hammer pin             | 69. Extractor plunger                             | 78. Extractor pin            |
| 8. Barrel lock nut stop plunger         | 60. Trigger pin            | 70. Right extractor spring                        | 79. Left extractor           |
| 9. Fore-end tube nut                    | 61. Trigger lock pin       | 71. Right extractor                               | 80. Stock                    |
| 10. Fore-end tube                       | 62. Hammer link            |   | 81. Fore-end                 |
| 11. Fore-end tube cap*                  |                            |   |                              |
| 12. Action bar*                         |                            |   |                              |
| 13. Magazine guide screw                |                            |   |                              |
| 14. Magazine guide                      |                            |   |                              |
| 15. Barrel lock nut                     |                            |   |                              |
| 16. Magazine plug†                      |                            |   |                              |
| 17. Barrel lock nut key (2)†            |                            |   |                              |
| 18. Magazine tube*                      |                            |   |                              |
| 19. Magazine spring                     |                            |   |                              |
| 20. Magazine follower                   |                            |   |                              |
| 21. Barrel lock compensator screw       |                            |   |                              |
| 22. Barrel lock spring                  |                            |   |                              |
| 23. Barrel lock compensator             |                            |   |                              |
| 24. Barrel lock                         |                            |   |                              |
| 25. Barrel adjusting bushing lock screw |                            |   |                              |
| 26. Barrel adjusting bushing lock†      |                            |   |                              |
| 27. Magazine lock†                      |                            |   |                              |
| 28. Barrel adjusting bushing†           |                            |   |                              |
| 29. Receiver                            |                            |   |                              |
| 30. Stock bolt stud†                    |                            |   |                              |
| 31. Stock bolt washer                   |                            |   |                              |
| 32. Stock bolt lock washer              |                            |   |                              |
| 33. Stock bolt                          |                            |   |                              |
| 34. Buttplate screw (2)                 |                            |   |                              |
| 35. Buttplate                           |                            |   |                              |
| 36. Stock reinforcement ring*           |                            |   |                              |
| 37. Ejector                             |                            |   |                              |
| 38. Ejector spring                      |                            |   |                              |
| 39. Right cartridge stop                |                            |   |                              |
| 40. Left cartridge stop                 |                            |   |                              |
| 41. Carrier                             |                            |   |                              |
| 42. Trigger plate                       |                            |   |                              |
| 43. Safety plunger                      |                            |   |                              |
| 44. Safety spring                       |                            |   |                              |
| 45. Safety                              |                            |   |                              |
| 46. Mainspring pin                      |                            |   |                              |
| 47. Trigger plate pin spring pin        |                            |   |                              |
| 48. Trigger plate stud (2)              |                            |   |                              |
| 49. Trigger plate pin spring            |                            |   |                              |
| 50. Left cartridge stop plunger screw   |                            |   |                              |
| 51. Left cartridge stop spring          |                            |   |                              |
| 52. Left cartridge stop plunger         |                            |   |                              |

\* Permanent factory assembly to other major part.

† Parts No's. 16, 17, 26, 27, 28, 30 to be factory dis-assembled only.





**T**HE Remington Model 31 slide-action shotgun was introduced in 1931 and remained in production until 1949. It was replaced in 1950 by the Model 870 Wingmaster slide-action shotgun. Made in 12-ga., 16-ga., and 20-ga., and in several grades, the Model 31 shotgun underwent several modifications during the course of production and these affect interchangeability of certain parts within guns of the 3 major series. The original 1931 series had a 'spring-up' barrel lock assembly which was replaced in 1934 with a screw-up assembly,

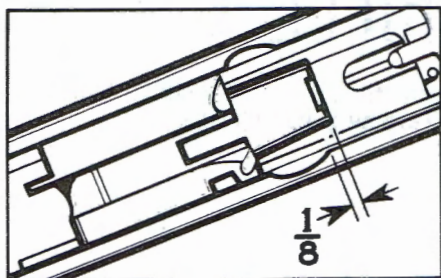
which was made smaller in 1941.

The initial series made from 1931 until 1936 included 12-ga. guns numbered from 0 to 25,000, and 16-ga. and 20-ga. guns numbered from 500,000 to 519,600. The second series produced from 1936 until 1940 included 12-ga. guns numbered from 25,001 to 35,000, and 16-ga. and 20-ga. guns numbered from 519,601 to 530,000. The barrel collar was omitted in this series.

The third series, made from 1941 until 1949, evidenced several changes over previous models. The Model 31

was made optionally available in a lightweight version with aluminum trigger plate and receiver. The safety button was made larger and numerous parts were changed, including the action bar lock, hammer, extractor, trigger lock, and trigger plate.

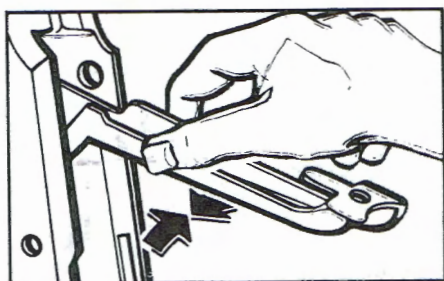
The Model 31 shotgun earned an enviable reputation for reliability during the course of its manufacture. Large numbers were purchased by the government during World War II for use in aircraft gunnery training, for arming guards, and for recreational purposes.



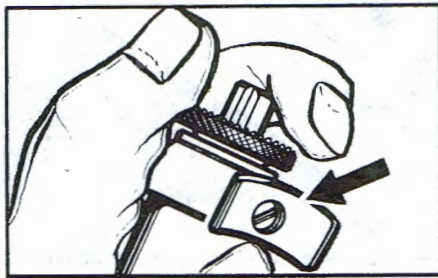
**1** Open action partially, unscrew barrel lock nut (15) to left, turn barrel (1) 90° left, and move it forward from receiver (29). Push out trigger plate pin (74) from right to left and turn gun bottom up. Slide trigger plate (42) forward until trigger plate studs (48) align with slots in sides of receiver and lift trigger plate out.

If gun is cocked, press action bar lock (56) to release trigger plate before moving it forward. Lift out right and left cartridge stops (39 and 40) from inside walls of receiver. Move fore-end (81) rearward until projection at rear of slide (68) is even with trigger plate holes in side of receiver. Pull upward on slide while moving fore-end forward to free action bar (12) from slide.

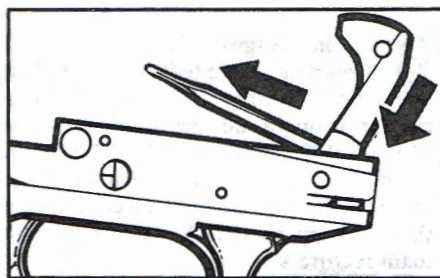
Holding slide up, disengage it from breechblock (72) and move block fully forward. Swing carrier (41) against block. Move slide until forward end is 1/8" forward of trigger plate stud slots as shown. Tip up right side of slide (side opposite action bar) and swing slide out sideways from receiver. This is effortless when slide is properly positioned; do not force it



**2** With fore-end and breechblock fully forward, swing front end of carrier outward until about perpendicular to receiver and press ends together to disengage pivots. Lift it away. Press ejector (37) fully into its slot and lift out breechblock. Swing ejector rearward and lift from its slot in side of receiver

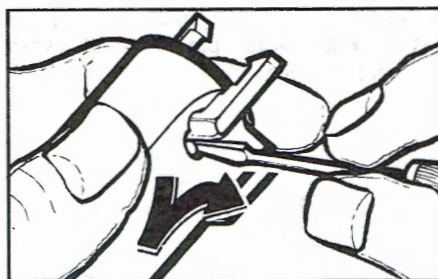


**3** Remove magazine guide screw (13) from top of magazine guide (14-arrow), grasping hand around all parts at front end of magazine tube (18) to prevent loss. Pull barrel lock nut (15) carefully from tube to prevent magazine spring (19) from releasing too fast. Remove magazine spring and magazine follower (20) from tube. Pull magazine guide from tube and slide fore-end assembly forward off tube

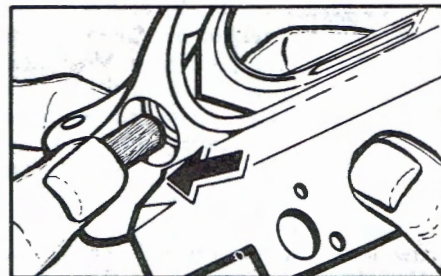


**5** With hammer (57) in 'fired' position, drift out mainspring pin (46) and remove safety spring (44) and safety plunger (43) from lower hole. Remove mainspring (64) and mainspring follower (63) from upper hole. Remove safety (45). Drive out hammer pin (59) and push hammer forward and down until rear of hammer link (62) is out of slot in trigger plate

Pull hammer link rearward disengaging hammer from action bar lock spring (55). Never lift hammer upward until it has been disengaged from this spring, else spring will become bent or broken. Lift away hammer. Drift out trigger pin (60) and remove action bar lock with spring attached. Trigger lock plunger (53) and trigger lock spring (54) may now be removed. Balance of trigger plate disassembly is obvious

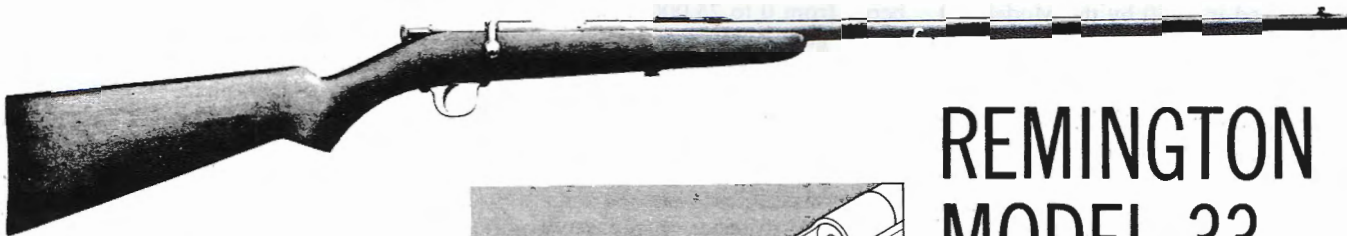


**4** Drift out firing pin retaining pin (73) from left to right and remove firing pin (75) and firing pin spring (76) from back end of breechblock. Drift extractor pin (78) out bottom of breechblock and remove left extractor (79) and left extractor spring (77). Insert small screwdriver in back of right extractor (71) and pry back extractor plunger (69), then push screwdriver forward, pushing right extractor out of slot. Remove extractor plunger and right extractor spring (70)



**6** Reassemble gun in reverse. When re-assembling mainspring, mainspring follower, safety spring, and safety plunger, it will facilitate reassembly to insert these parts first. Then, after replacing the mainspring pin, and using a short length of wood dowel to compress safety plunger, re-insert safety. This method is converse to logical procedure—that is, first replacing the safety, then spring-loaded parts ■





# REMINGTON MODEL 33 RIFLE

Illustrations by FRANK G. HART  
Text by LUDWIG OLSON

**B**ACK in August 1899, John M. Browning patented a single-shot, bolt-action, rimfire rifle which Winchester brought on the market as the Model 1900. This low-priced but serviceable cal. .22 arm set the pattern for many similar rifles introduced through the years by various U. S. and foreign manufacturers.

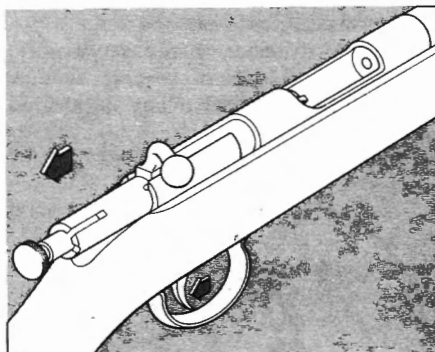
Remington's first rifle of this type was not introduced until 1931. Designated Model 33, this bolt-action take-down rifle was based on patents granted to Remington engineer C. C. Loomis. It fires .22 short, long, and long rifle standard-velocity and high-speed cartridges. A Remington brochure published in 1934 called it "the finest cal. .22 single-shot rifle ever offered at the price."

According to this brochure, the retail price of the Standard Grade Model 33 fitted with a white metal bead front sight and U-notch open rear sight was \$5.50. When equipped with a Lyman No. 55 aperture rear sight, the rifle retailed for \$7.70. There was also an NRA Junior Target Grade of the Model 33. This rifle was fitted with a Patridge-type blade front sight, Lyman No. 55 aperture receiver sight, sling swivels, and a 1"-wide adjustable leather sling. It was offered at \$10.30 retail.

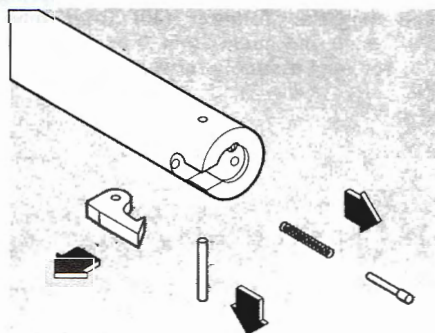
All grades of the Model 33 have a 24" round barrel and an American walnut stock with a pistol grip. Most metal parts are blued. The action works smoothly, and the firing pin is cocked manually after closing the bolt. No safety lever is provided, but the firing pin can be pulled back and rotated to a safe position. An automatic rebounding lock also is provided. This is designed to prevent discharge if the firing pin is hit accidentally.

Unlike many bolt-action rifles chambered for .22 rimfire ammunition, the Model 33 has dual-opposed locking lugs. One of these lugs is the root of the bolt handle. The design of this little 4½-lb. rifle is generally excellent.

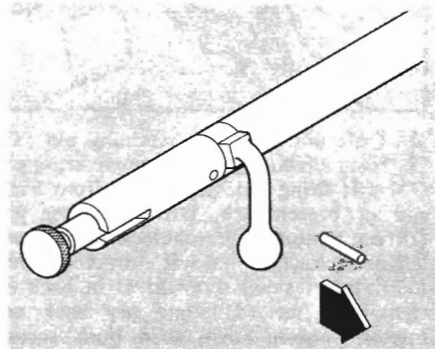
In 1936, the Model 33 was replaced by the Remington Model 41 .22 rimfire rifle.



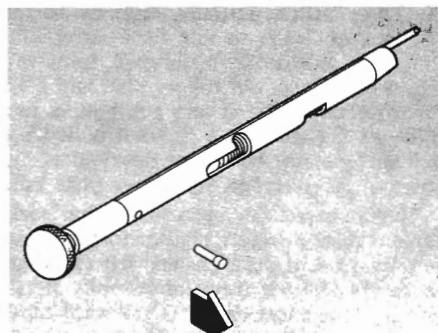
**1** Before disassembly, open the action to make sure the rifle is unloaded. Lift bolt handle, pull trigger (26) and remove bolt assembly from receiver (18). Loosen takedown screw (25), and remove stock (24).



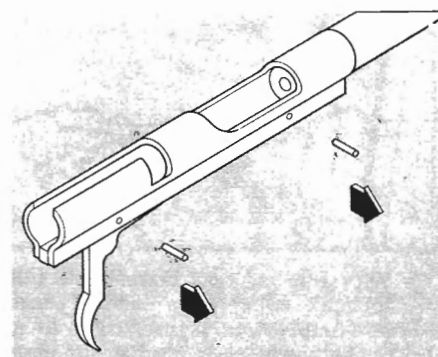
**2** Drive out extractor pin (7), and remove extractor (6), extractor spring plunger (9), and extractor spring (8). Drive out ejector pin (5), and remove ejector (4) from front of bolt (2).



**3** Drive out bolt extension sleeve pin (3), and pull firing pin assembly from bolt.



**4** After driving out firing pin extension pin (12) from left to right, remove firing pin extension (11), retractor spring (19), and retractor spring plunger (20) from firing pin (10). Mainspring (14) and mainspring plunger (15) are permanently staked in place inside the firing pin. Disassembly of these parts should not be attempted.



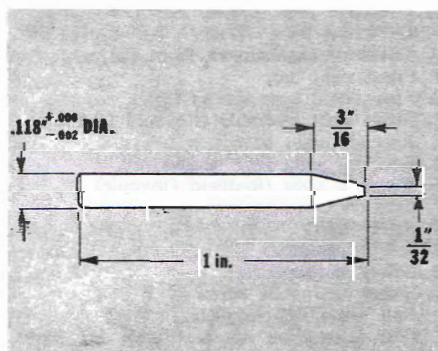
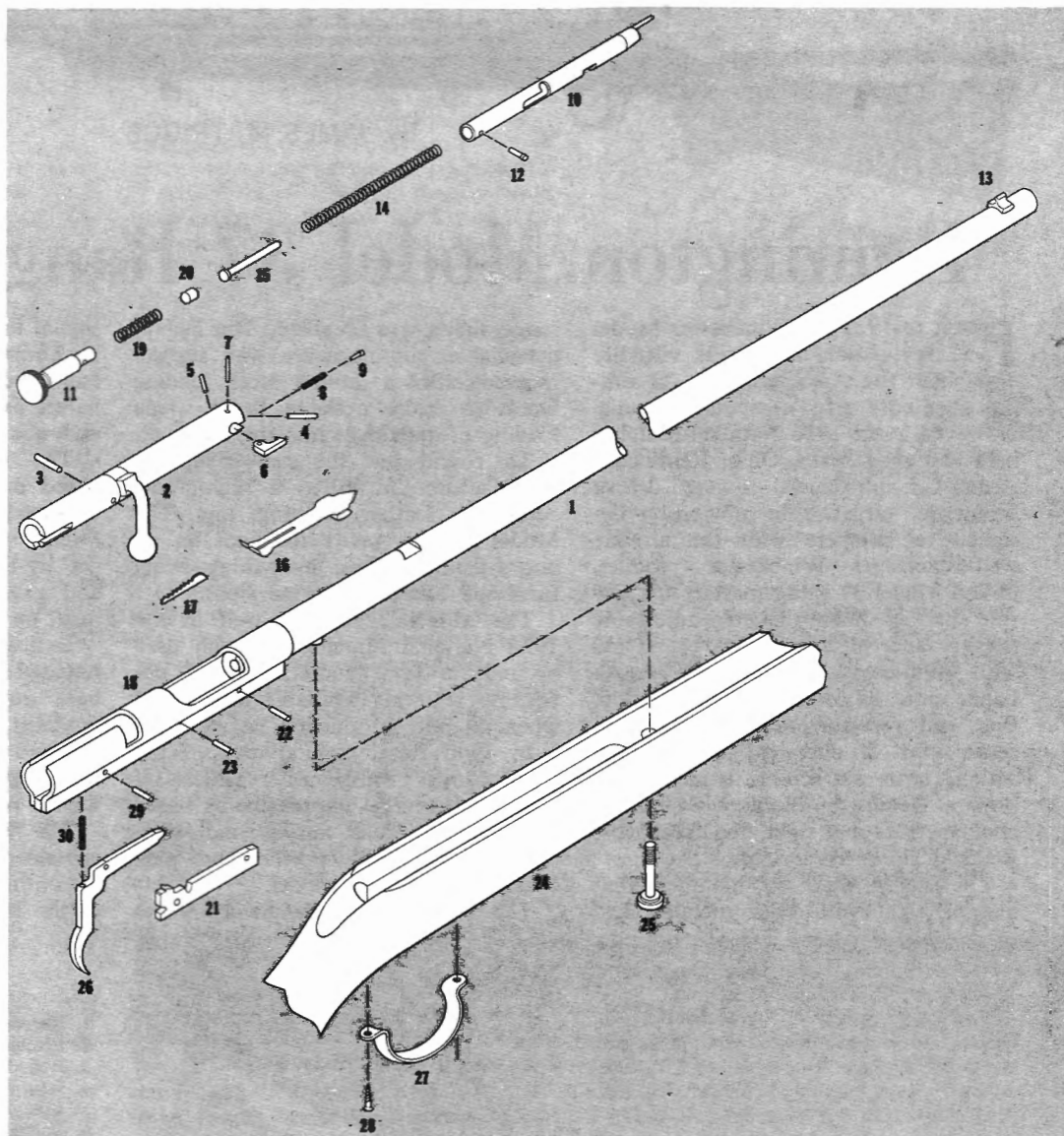
**5** Drive out trigger and sear pins (29) and (22). Remove trigger (26), trigger spring (30), and sear (21) from bottom of receiver.



## PARTS LEGEND

1. Barrel
2. Bolt
3. Bolt extension sleeve pin
4. Ejector
5. Ejector pin
6. Extractor
7. Extractor pin
8. Extractor spring
9. Extractor spring plunger
10. Firing pin
11. Firing pin extension
12. Firing pin extension pin
13. Front sight
14. Mainspring
15. Mainspring plunger
16. Rear sight leaf
17. Rear sight step
18. Receiver
19. Retractor spring
20. Retractor spring plunger
21. Sear
22. Sear pin
23. Sear stop pin
24. Stock
25. Takedown screw
26. Trigger
27. Trigger guard
28. Trigger guard screw (2)
29. Trigger pin
30. Trigger spring

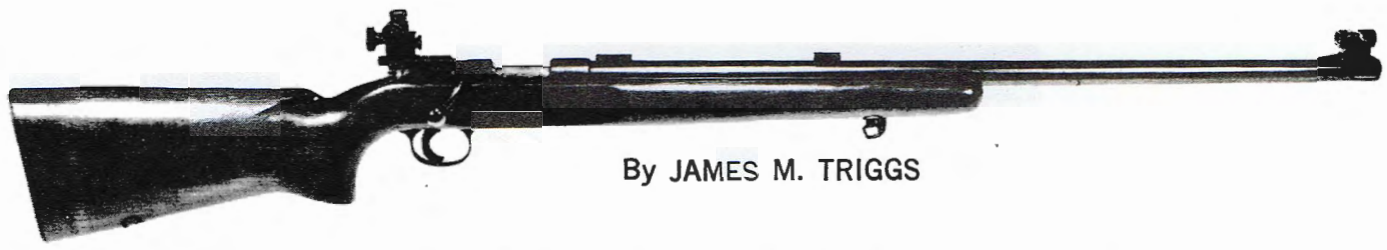
Note: Buttplate and screws are not shown.



**6** Reassemble in reverse. Replacement of firing pin assembly in bolt is best accomplished by making a special assembly pin from drill rod as illustrated. Insert reassembled firing pin assembly into bolt. Align small opening between mainspring plunger and retractor spring plunger with extension sleeve pin hole in bolt. Insert pointed end of special assembly pin into hole from right side of bolt and tap through. This will separate mainspring plunger and retractor spring plunger to allow passage of extension sleeve pin. Align and drive extension sleeve pin through from left to right.







By JAMES M. TRIGGS

# Remington Model 37 Rangemaster

PRIOR to 1937 the Winchester Model 52 bolt-action target rifle virtually dominated the American cal. .22 rim-fire smallbore rifle competitive scene. However, at the 1936 National Matches held at Camp Perry, Ohio, Remington Arms Co. introduced a new deluxe smallbore target rifle obviously designed to compete with the already well-established Winchester product. Called Model 37 Rangemaster, the new rifle had a heavy barrel, adjustable trigger, and high comb target stock, with semi-beavertail fore-end, barrel band, and adjustable fore-end stop. Bolt and receiver were hardened to resist wear. It also had a speed-lock action, twin extractors, twin locking lugs, a Remington-designed ¼-minute click aperture rear sight, and detachable Redfield globe front sight.

The sights were so mounted that line of sight with both metallic and

scope sights was identical. The 5-shot, detachable clip-magazine was supplemented with a milled steel loading block to make possible rapid single loading of cartridges into the chamber.

To round out the new rifle, the manufacturer furnished a high-grade, adjustable, leather shooting sling. The Model 37 was ready to shoot on an out-of-the-box basis, everything being furnished except telescope sight.

The Model 37 scored well in the 1936 National Matches although used by only a few shooters. It did not become regularly available until 1937 when quantity production began.

In 1940 Remington announced the 'New Model' Rangemaster which incorporated several improvements based on extensive field testing and comments from shooters who had purchased the original model.

The stock was completely rede-

signed to incorporate suggestions made by Thurman Randle, smallbore shooter and one-time NRA President. The barrel band was omitted and the fore-end was of full beavertail pattern.

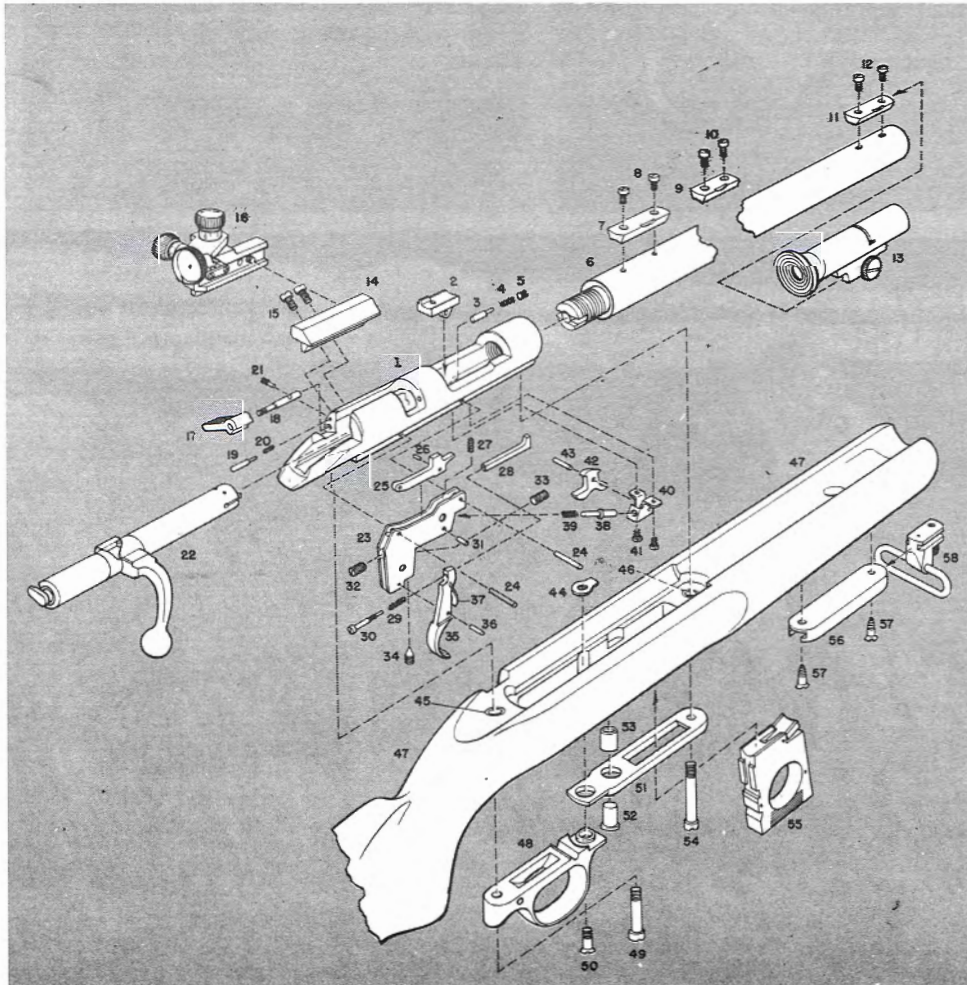
The new trigger mechanism was based on a design by J. B. Sweany, California inventor and gunsmith. The Sweany trigger, dubbed 'Miracle Trigger' by Remington, was fully adjustable and gave almost imperceptible movement on release.

In the original model the bolt was released from the receiver by pulling back on the trigger, but in the new model it was necessary to pull the trigger and at the same time depress the bolt stop through a hole in the ejector with a punch to release the bolt.

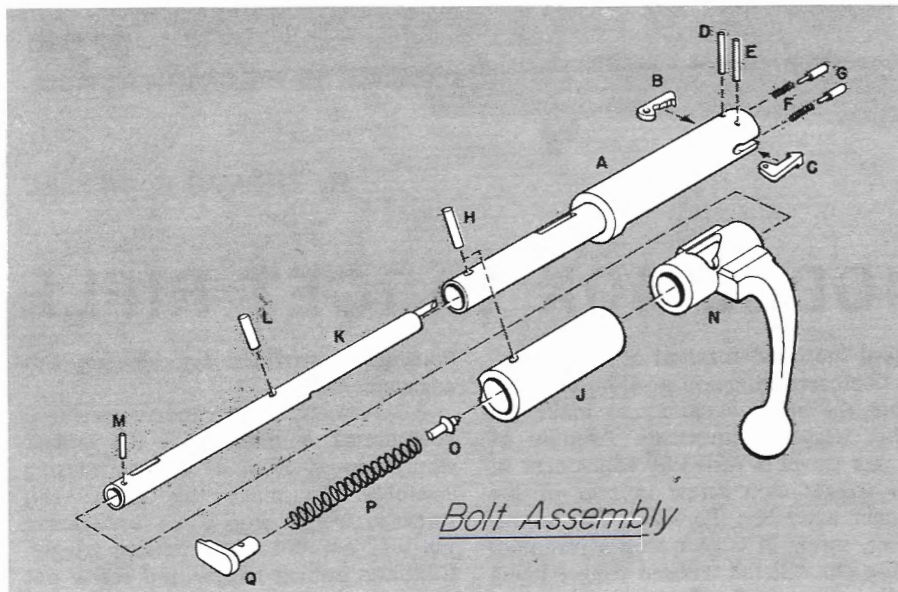
The Remington Model 37 gained an enviable record in competition, but was discontinued in 1955 upon introduction of the Model 40X rifle.

## Parts Legend

1. Receiver
2. Ejector
3. Bolt handle detent plunger
4. Bolt handle detent spring
5. Bolt handle detent screw
6. Barrel
7. Telescope base, rear
8. Telescope base screws, rear (2)
9. Telescope base, front
10. Telescope base screws, front (2)
11. Front sight base
12. Front sight base screws (2)
13. Front sight assembly (Redfield Olympic)
14. Receiver sight base
15. Receiver sight base screws (2)
16. Receiver sight (Redfield Olympic)
17. Safety
18. Safety shaft
19. Safety detent
20. Safety detent spring
21. Safety shaft lock screw
22. Bolt assembly, complete  
(See illustration on next page for parts breakdown)
23. Trigger housing
24. Trigger housing pins (2)
25. Bolt stop
26. Bolt stop pin
27. Bolt stop spring
28. Sear
29. Sear spring
30. Sear screw
31. Sear guide pin
32. Trigger adjusting screw, rear
33. Trigger adjusting screw, front







### Bolt Assembly Parts Legend

- |                          |                           |                       |
|--------------------------|---------------------------|-----------------------|
| A. Bolt                  | G. Extractor plungers (2) | M. Safety cam pin     |
| B. Extractor, left       | H. Bolt sleeve pin        | N. Bolt handle        |
| C. Extractor, right      | J. Bolt sleeve            | O. Mainspring plunger |
| D. Extractor pin, left   | K. Firing pin             | P. Mainspring         |
| E. Extractor pin, right  | L. Firing pin cam pin     | Q. Safety cam         |
| F. Extractor springs (2) |                           |                       |

To disassemble bolt, remove bolt assembly from receiver. With bolt cocked, carefully drift out safety cam pin (M) and remove safety cam (Q) from rear of firing pin (K). Cover rear end of firing pin to prevent forcible ejection of mainspring and drift out bolt sleeve pin (H). Remove mainspring (P) and mainspring plunger (O) from firing pin. Remove firing pin from bolt (A). Remove bolt sleeve (J). Remove firing pin cam pin

(L) and remove bolt handle (N) to rear of bolt. Extractors (B, C) can be removed by drifting out extractor pins (D, E) from bottom to top. After reassembling bolt handle and sleeve to bolt, insert mainspring and plunger into firing pin. Press mainspring into firing pin with blade of small screwdriver or similar tool and replace bolt sleeve pin over mainspring. With bolt cocked, replace safety cam and pin in rear of firing pin

34. Trigger adjusting screw
35. Trigger
36. Trigger pin
37. Trigger spring
38. Magazine lock plunger
39. Magazine lock plunger spring
40. Magazine lock bracket
41. Magazine lock bracket screws (2)
42. Magazine lock
43. Magazine lock pin
44. Front guard bow screw nut
45. Rear guard bow screw bushing
46. Front guard bow extension screw bushing
47. Stock
48. Guard bow
49. Rear guard bow screw
50. Front guard bow screw
51. Guard bow extension
52. Magazine lock button
53. Magazine lock button bushing
54. Front guard bow extension screw
55. Loading platform  
(magazine assembly not shown)
56. Swivel base guide
57. Swivel base guide screws (2)
58. Front swivel assembly
59. Rear swivel (not shown)
60. Buttplate (not shown)
61. Buttplate screws (not shown)

### Disassembly Procedure

To remove bolt assembly (22), open bolt and, while pulling trigger, press down

on bolt stop (25) through hole in top of ejector (2) with small punch or similar instrument. Draw bolt out of receiver (1).

To remove barrel and receiver from stock, press in magazine lock button (52) and remove magazine or loading platform (55) from underside of stock. Unscrew rear guard bow screw (49) and front guard bow extension screw (54). Lift barrel and receiver out of stock (47).

To remove trigger assembly, drift out 2 trigger housing pins (24). Remove ejector (2) from top of receiver and drop trigger housing (23) out bottom of receiver. Remove magazine lock plunger (38) and spring (39). To remove trigger (35), remove 3 adjusting screws (32, 33, 34). Remove sear screw (30) and sear spring (29). Drive out trigger pin (36) and bolt stop pin (26). Trigger, bolt stop (25), and sear (28) can now be removed from trigger housing. Magazine lock assembly is removed from underside of receiver by unscrewing 2 magazine lock bracket screws (41).

To remove safety (17) unscrew safety shaft lock screw (21) in left side of receiver and pull safety out to rear, taking care not to lose safety detent spring (20) and detent (19). Reverse procedure to reassemble.

## A MAN TO REMEMBER

### ELI WHITNEY

*Applied the principle of interchangeable parts to the firearms industry*



Born—Westboro, Mass.,  
Dec. 8, 1765  
Died—New Haven,  
Conn., Jan. 8, 1825

AN interest in mechanics and an ability to simplify manufacturing processes characterized Eli Whitney from an early age. His prosperous farmer father wanted his son to go to college, but Eli was more interested in putting around his father's workshop. At the age of 15 he began the manufacture of nails there and soon had to hire a helper. When the demand for nails declined at the end of the Revolution, he turned his attention to hatpins and almost monopolized that business in his area of the state. By the time he was 18, however, an interest in going to college developed, and he set out to prepare for it and finally to enter Yale, from which he graduated at the age of 26.

After college, Whitney went south to prepare for a law career, and while there he developed the cotton gin that was patented in 1794. Succeeding years were filled with patent suits and struggles to manufacture and market his products. Despite the fact that he eventually won his suits, Whitney received little financial reward for his epoch-making machine.

As early as 1798 Whitney realized the cotton gin was a lost cause financially, and he turned his attention to firearms. In that year he obtained a contract for 10,000 muskets from the Federal government, and he decided to attempt to manufacture the guns on an assembly-line basis with parts as nearly interchangeable as possible. The theory of interchangeability was not new with Whitney, but he was one of the first ever to apply it and certainly the first to use it in the manufacture of firearms. His project required the designing of entirely new machines and processes, and it took him 8 years to complete the contract instead of 2 which were specified. He had proved his point, however. His system was adopted in the Federal armories, future contracts were forthcoming, and the firearms business finally brought him the financial security he had been denied so long.—HAROLD L. PETERSON.





By THOMAS E. WESSEL

## REMINGTON MODEL 40X TARGET RIFLE

THE Remington Model 40X small-bore target rifle was introduced in 1955. Chambered for the cal. .22 long rifle cartridge, the Model 40X is of single-shot type with speed-lock firing mechanism. The bolt has 2 large locking lugs. The upper lug engages the forward edge of the receiver bridge, whereas the lower lug is housed in a mortise cut into the bottom of the receiver.

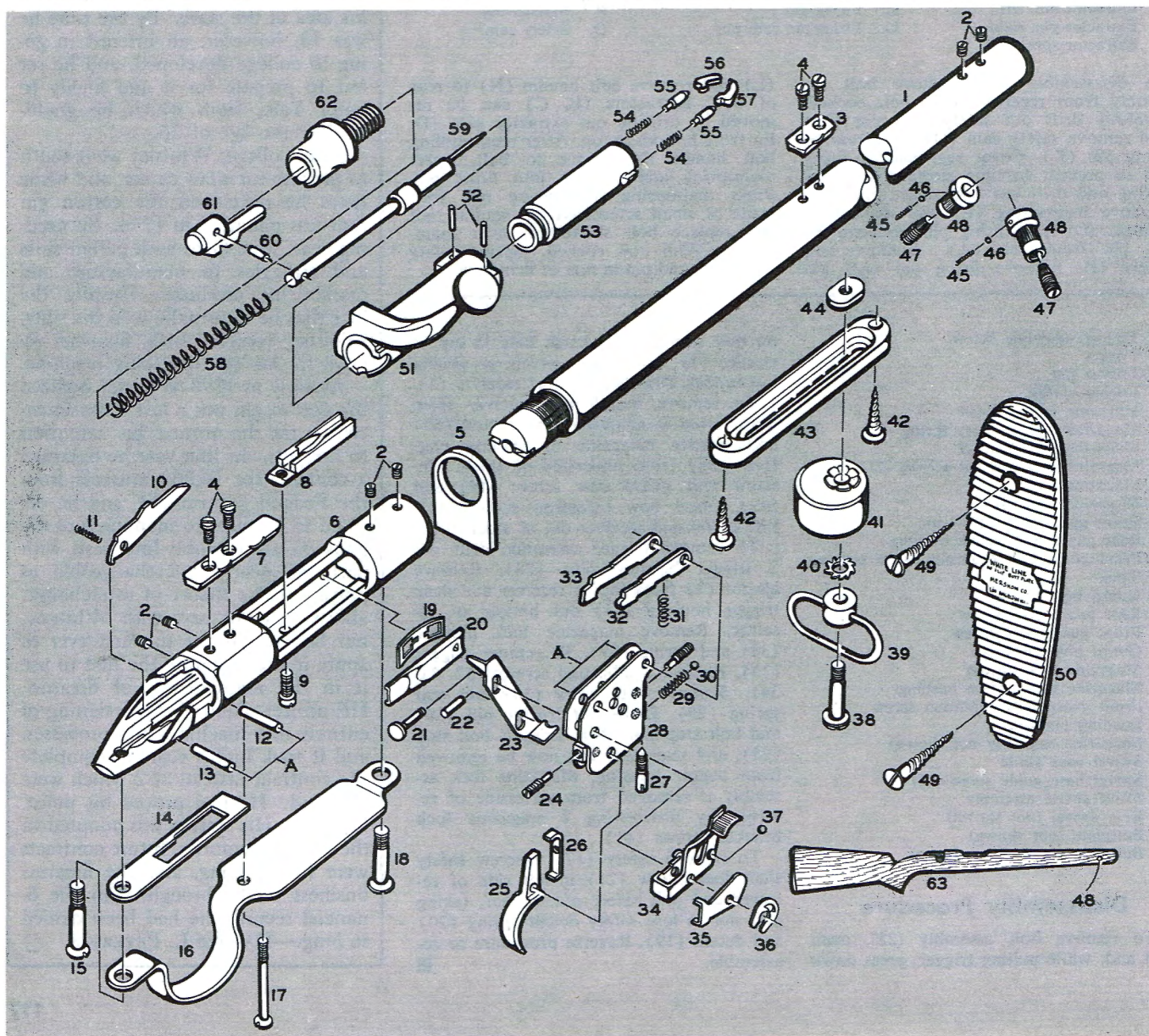
The trigger mechanism is adjustable for weight of pull, travel of trigger, and overtravel of trigger. Adjustment for weight of pull is made by loosening or tightening an external screw within the

guard loop and forward of the trigger.

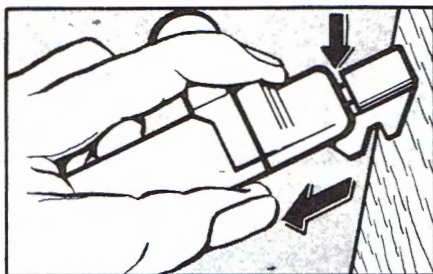
The barreled action must be removed from the stock assembly to make the other trigger adjustments. Amount of trigger travel is varied by adjustment of the trigger stop screw in rear of the trigger assembly. To make this adjustment, screw in trigger stop screw until firing pin will fall without trigger being pulled. Then back off trigger stop screw approximately  $\frac{1}{8}$  turn, or until firing pin will not fall unless trigger is pulled. Engagement of sear with connector should be approximately .010". An inspection hole in right side of trigger

housing is provided for viewing this engagement.

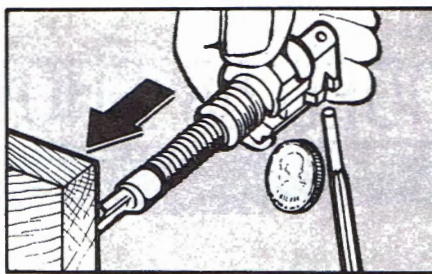
Adjustment for trigger overtravel (overdraw) is made with the trigger stop screw at front of trigger housing assembly. To make this adjustment, screw in trigger stop screw until firing pin will not fall while pulling trigger. Continue pulling trigger and screw out trigger stop screw until firing pin will fall. Then screw out trigger stop screw a fraction more. A drop of Du Pont or a similar cement should then be placed on heads of both trigger stop screws to seal the adjustments.



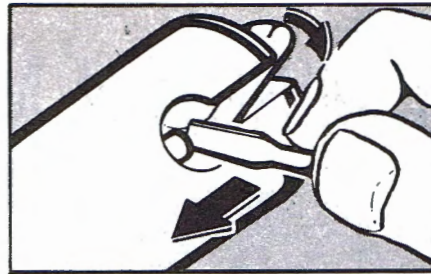




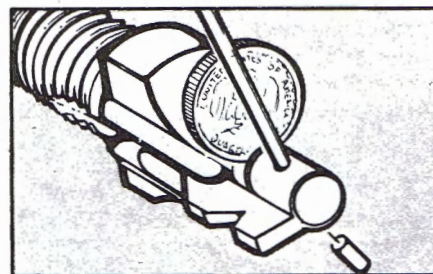
**1** Disassemble Model 40X by pushing safety (34) to fire position, press upward on bolt stop release (23), raise bolt handle, and withdraw bolt assembly from receiver (6). Engage rearmost notch of firing pin head (61) on edge of bench, or grip flat undersection of firing pin head in vise, and pull back until coin can be inserted between firing pin head and bolt plug (62, upper arrow). Unscrew bolt plug with firing pin mechanism from bolt body.



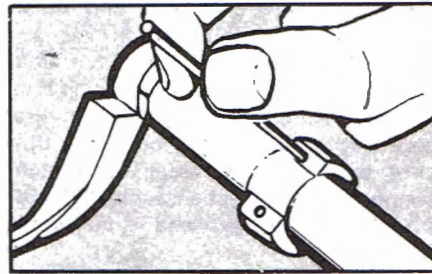
**3** Insert front end of firing pin assembly into a 1/4" hole drilled in a hardwood block held firmly in a vise. Exert forward pressure on bolt plug (62) until drift and coin drop away. Slowly release tension rearward on mainspring. Further disassembly is immediately apparent.



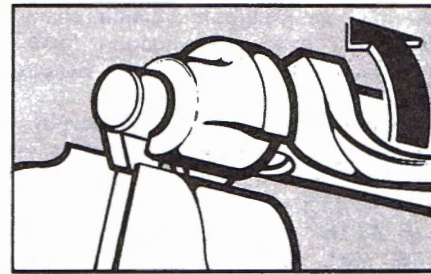
**5** To remove extractors (56 & 57), insert small screwdriver blade between extractor plunger (55) and rear shoulder of extractor. Force plunger rearward in bolt head and away from rear shoulder of extractor. Pry up and raise rear of extractor from slot in bolt head, then pivot extractor in slot and remove from bolt head. Extractor plunger and extractor spring (54) can be removed at this time. Instructions are for right or left extractor.



**2** Drift out firing pin cross pin (60) using drift or long slave pin which takes place of the cross pin in the firing pin head. Be careful not to dislodge the coin at this time as the mainspring (58) will cause the parts to fly with great force.



**4** Using a small drift, remove bolt pins (52) from locking lugs on bolt body (51). Pull away bolt head (53).

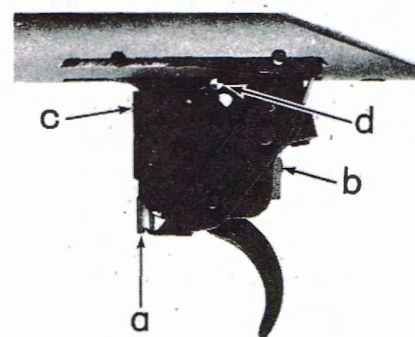


**6** Bolt assembly cannot be reassembled to rifle unless firing pin is in retracted position. If firing pin has been released forward, retract it by gripping flat undersection of firing pin head tightly in a vise and raising bolt handle upward. This will cam bolt body forward and retract firing pin. Reassemble arm in reverse order. Do not disassemble trigger housing.

## Parts Legend

- |                             |                                 |                               |
|-----------------------------|---------------------------------|-------------------------------|
| 1. Barrel *                 | 23. Bolt stop release           | 45. Bedding detent spring (2) |
| 2. Receiver plug* screw (6) | 24. Trigger stop screw (2)      | 46. Bedding detent ball (2)   |
| 3. Telescope base, front    | 25. Trigger                     | 47. Bedding screw (2)         |
| 4. Telescope base screw (4) | 26. Connector                   | 48. Bedding escutcheon (2)    |
| 5. Barrel bracket *         | 27. Trigger adjusting screw     | 49. Butt pad screw (2)        |
| 6. Receiver *               | 28. Trigger housing             | 50. Butt pad                  |
| 7. Telescope base, rear     | 29. Trigger spring              | 51. Bolt body                 |
| 8. Ejector                  | 30. Trigger adjusting ball      | 52. Bolt pin (2)              |
| 9. Ejector screw            | 31. Sear spring                 | 53. Bolt head                 |
| 10. Bolt stop               | 32. Sear                        | 54. Extractor spring (2)      |
| 11. Bolt stop spring        | 33. Safety cam                  | 55. Extractor plunger (2)     |
| 12. Sear pin                | 34. Safety                      | 56. Extractor, left           |
| 13. Bolt stop pin           | 35. Safety detent spring        | 57. Extractor, right          |
| 14. Trigger guide plate     | 36. Safety snap washer          | 58. Mainspring *              |
| 15. Rear guard screw        | 37. Safety detent ball          | 59. Firing pin *              |
| 16. Trigger guard           | 38. Front swivel screw          | 60. Firing pin cross pin      |
| 17. Center guard screw      | 39. Front swivel                | 61. Firing pin head           |
| 18. Front guard screw       | 40. Front swivel washer         | 62. Bolt plug                 |
| 19. Receiver filler spring  | 41. Front swivel block          | 63. Stock                     |
| 20. Receiver filler piece   | 42. Front swivel base screw (2) |                               |
| 21. Safety pivot pin        | 43. Front swivel base           |                               |
| 22. Trigger pin             | 44. Front swivel nut            |                               |

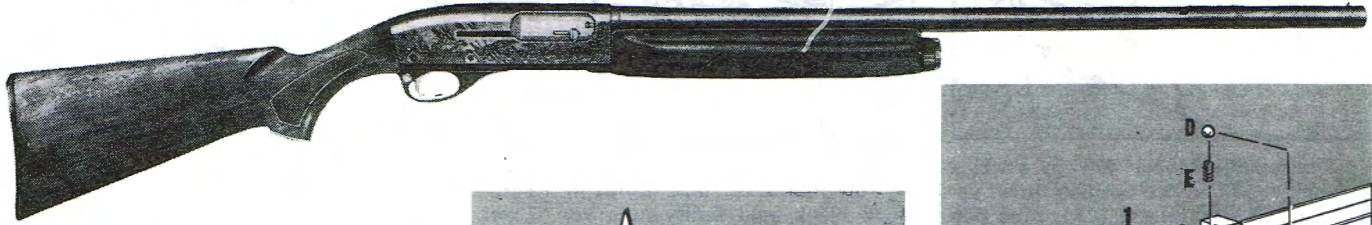
\* Denotes a permanent factory assembly.



Model 40X adjustable trigger. (a) Weight of pull adjustment screw. (b) Rear trigger stop screw for adjusting trigger travel. (c) Front trigger stop screw for adjusting trigger overtravel. (d) Inspection hole in trigger housing for viewing sear and connector engagement.



# REMINGTON MODEL 58 SHOTGUN



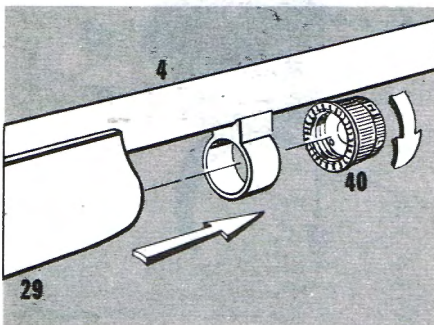
By JOHN F. FINNEGAN

**T**HE Sportsman 58 autoloader with "Power-Matic" action was the first gas-operated semi-automatic shotgun produced by Remington. Introduced in 1956, this gun was offered in field, trap, and skeet versions, and various grades. Choice of gauges was 12, 16, and 20 with 2¾" chamber length. There was also a 12-ga. Magnum version chambered for three-inch Magnum loads. Interchangeable barrels with various lengths and chokes were offered.

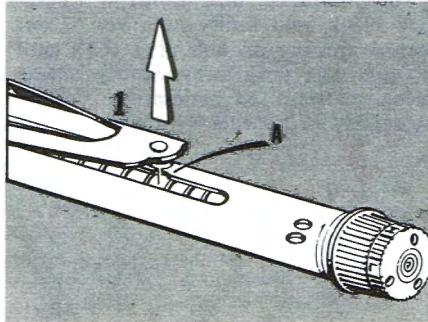
During firing, a portion of the powder gas passes through two orifices in the barrel and impinges on the piston assembly in the front of the magazine tube. As the piston moves rearward, it drives back the action bar assembly and breechbolt. The compressed action spring then returns the parts forward. Due to the gas-operated action, the felt recoil seems soft and the functioning cycle is smooth and fast.

A selector on the front of the magazine cap assembly must be turned to adjust the action for light and heavy loads. Capacity of the gun is three shells, two in the magazine plus the round in the chamber.

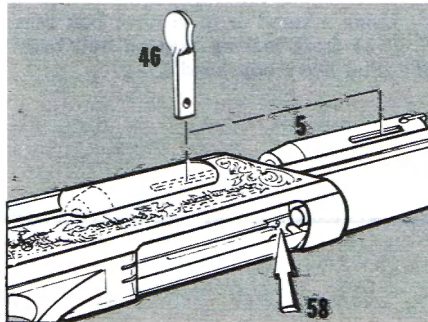
In 1963, an improved Remington semi-automatic shotgun, the Model 1100, was introduced, and shortly thereafter the Sportsman 58 was discontinued.



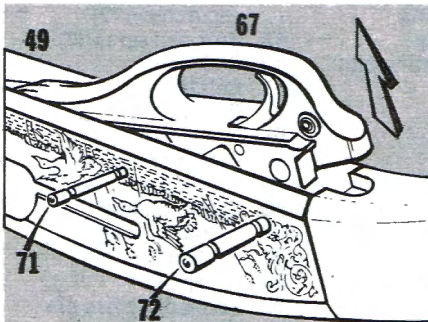
**1** Before starting to disassemble the Model 58, engage safety (51) on safe and unload magazine and chamber. Remove magazine cap (40) and pull barrel (4) and fore-end (29) forward out of gun. Separate fore-end from barrel.



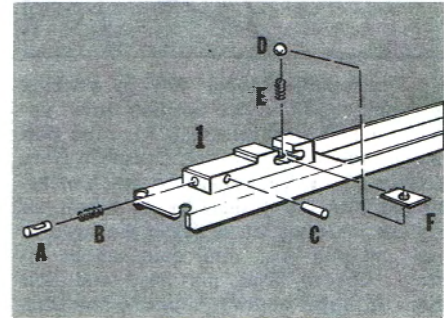
**2** Replace magazine cap and close action. Then, pull action bar assembly (1) to rear until action bar stud aligns with stud notch (A) in magazine tube. Lift action bar assembly up thru notch and position stud on tube. Unscrew magazine cap assembly. Piston assembly (47) and action spring (2) will disassemble from open end of magazine tube.



**3** To remove breechbolt (5) and action bar assembly, pull out operating handle (46). Depress left shell latch (58). Then, pull action bar assembly forward to disassemble action bar and breechbolt from gun.

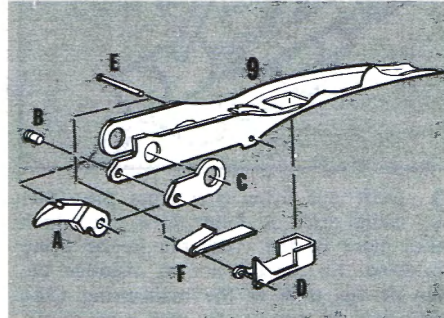


**4** Tap out front trigger plate pin (71) and rear trigger plate pin (72), and lift trigger plate (67) with assembled parts out of receiver (49).



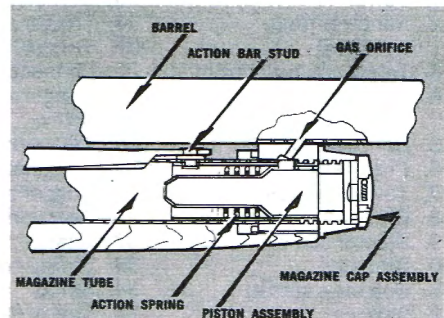
**5** Exploded view of action bar assembly (1):

- A—Bolt return plunger
- B—Bolt return slide plunger spring
- C—Bolt return plunger pin
- D—Operating handle plunger
- E—Operating handle plunger spring
- F—Operating handle plunger retainer



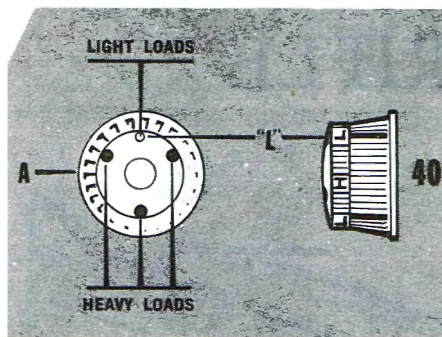
**6** Exploded view of carrier assembly (9):

- A—Carrier dog
- B—Carrier dog pin
- C—Carrier dog washer
- D—Carrier release
- E—Carrier release pin
- F—Carrier release spring



**7** After shot leaves barrel, a measured portion of residual gases is exhausted downward through two orifices in barrel. Metered gases thus supply energy to piston assembly for opening action. The action spring then closes action. Excess gas in piston assembly is vented through magazine cap by load selector on cap (see Fig. 8).





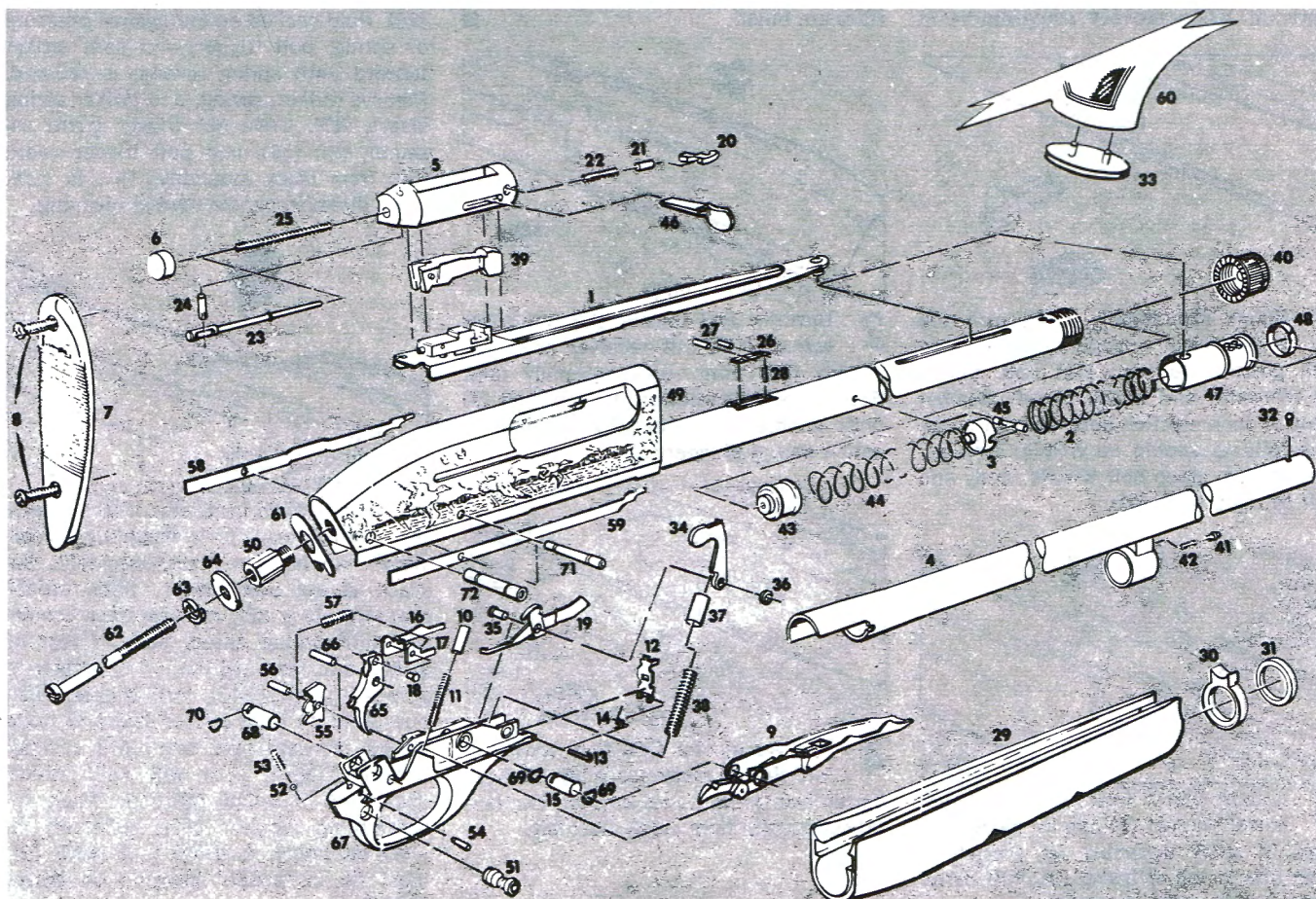
8 Magazine cap assembly (40). Inside view is at A. When using light loads, selector on cap is turned to "L" marking, and one small vent is opened to vent any excess gas. Using heavy loads, selector on cap is turned to "H" marking. Three larger vents will then be open.

#### Parts Legend

1. Action bar assembly
2. Action spring
3. Action spring stop
4. Barrel assembly
5. Breechbolt
6. Buffer
7. Buttplate
8. Buttplate screws (2)
9. Carrier assembly

10. Carrier dog follower
11. Carrier dog follower spring
12. Carrier latch
13. Carrier latch pin
14. Carrier latch spring
15. Carrier pivot tube
16. Connector, left
17. Connector, right
18. Connector pin
19. Disconnecter
20. Extractor
21. Extractor plunger
22. Extractor spring
23. Firing pin
24. Firing pin retaining pin
25. Firing pin retractor spring
26. Follower latch
27. Follower latch pin (2)
28. Follower latch spring
29. Fore-end
30. Fore-end ring
31. Fore-end ring washer
32. Front sight
33. Grip cap
34. Hammer
35. Hammer pin
36. Hammer pin washer
37. Hammer plunger
38. Hammer spring
39. Locking block assembly
40. Magazine cap assembly
41. Magazine cap detent

42. Magazine cap detent spring
43. Magazine follower
44. Magazine spring
45. Magazine spring pin
46. Operating handle
47. Piston assembly
48. Piston ring
49. Receiver assembly
50. Receiver stud
51. Safety
52. Safety detent ball
53. Safety spring
54. Safety spring retaining pin
55. Sear
56. Sear pin
57. Sear spring
58. Shell latch, left
59. Shell latch, right
60. Stock assembly
61. Stock bearing plate
62. Stock bolt
63. Stock bolt lock washer
64. Stock bolt washer
65. Trigger
66. Trigger pin
67. Trigger plate
68. Trigger plate pin bushing
69. Trigger plate pin detent spring, front (2)
70. Trigger plate pin detent spring, rear
71. Trigger plate pin, front
72. Trigger plate pin, rear





# REMINGTON NYLON 66 RIFLE

Illustrations By FRANK G. HART  
Text By LUDWIG OLSON

**I**NTRODUCTION of the Remington Nylon 66 cal. .22 semi-automatic rifle in 1959 heralded a new concept in firearms. Featuring a one-piece stock, receiver, and fore-end produced from structural nylon, this unusual blowback-operated rifle was designed by a team of Remington engineers headed by Wayne E. Leek. The designation Nylon 66 was taken from the name of the high-strength DuPont nylon selected for the rifle.

Chambered for .22 long-rifle rimfire regular or high-speed cartridges, this rifle has a 14-round tubular magazine in the buttstock. Due to the unusual construction, troublesome fitting of stock to receiver is eliminated. Another highly favorable feature is that the nylon is extremely strong and does not warp. Also, the self-lubricating properties of nylon make the need for oiling the rifle unnecessary except to prevent rusting of steel parts. This reduction in amount of lubricant helps prevent sluggishness in

cold weather and slows accumulation of fouling in the mechanism.

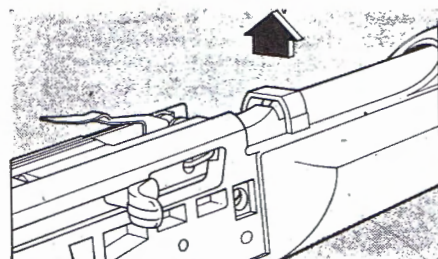
Weight of this reliably functioning rifle is only 4¼ lbs., and handling qualities are excellent. Accuracy is very good for a semi-automatic rifle, especially considering the lightness of the arm.

The lightweight barrel of 19½" length is fitted with a square-top front sight of ramp type. A fully adjustable square-notch rear sight is fastened to the receiver cover assembly. Lengthwise grooves on top of the receiver cover permit easy attachment of standard clamp-on telescope sight mounts.

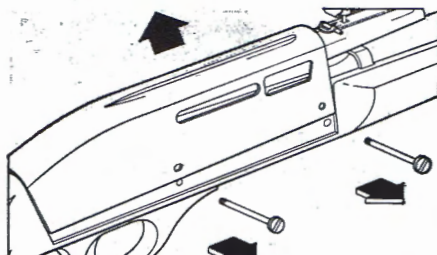
In addition to the stock assembly, the bolt handle, safety, trigger, trigger guard, and several other parts are nylon. The barrel, breechbolt, receiver cover assembly, striker, springs, and various small components are steel. When first introduced, this rifle was offered with choice of Mohawk Brown or Seneca Green stock. Seneca Green was later dropped, and Apache Black was added. The version with Apache Black stock has a chrome-plated barrel and receiver cover. These parts on other Nylon 66 rifles are blued. ■



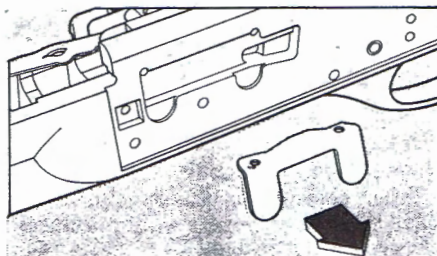
**1** Before disassembly, make sure rifle is unloaded. Engage safety (36) on safe position to rear. Pull bolt handle (8) rearward, and check barrel chamber through open ejection port. Colored magazine follower should be visible. With action cocked, grasp bolt handle firmly and pull to right from rifle.



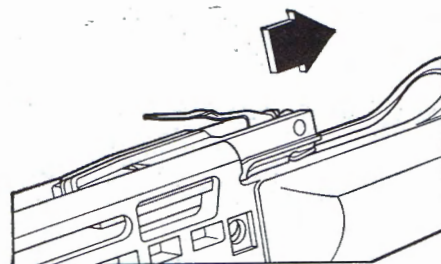
**3** Loosen barrel lock screw (6) until barrel bracket (4) can be moved upward in stock assembly far enough to clear slot in top of barrel (3). Pull barrel forward from stock assembly.



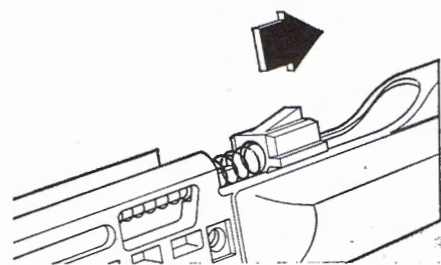
**2** Unscrew and remove the two cover screws (14). Lift receiver cover assembly (34) from stock assembly (46). Replace bolt handle into hole in bolt (7) until handle is retained by pressure of action spring plunger (2).



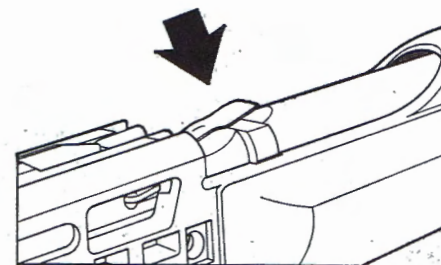
**4** Remove ejector (19) from recess in left side of stock assembly. Remove barrel lock screw, barrel bracket, and barrel support (5) from stock assembly.



**5** Remove bolt handle. Push bolt forward and remove from stock assembly. Action spring (1) and action spring plunger (2) are also disassembled from rifle at this time.



**6** Push safety forward to fire position. Take care not to touch trigger (48) since firing pin striker (27) is under compressed load of firing pin striker spring (28). Hold cocked striker against pressure of spring, pull trigger, and ease striker forward until spring tension is relieved. Remove striker, spring, and striker spring sleeve (47). Drive out trigger guard assembly pin (51), and pull trigger guard (50) from stock assembly. This is sufficient disassembly for normal cleaning.



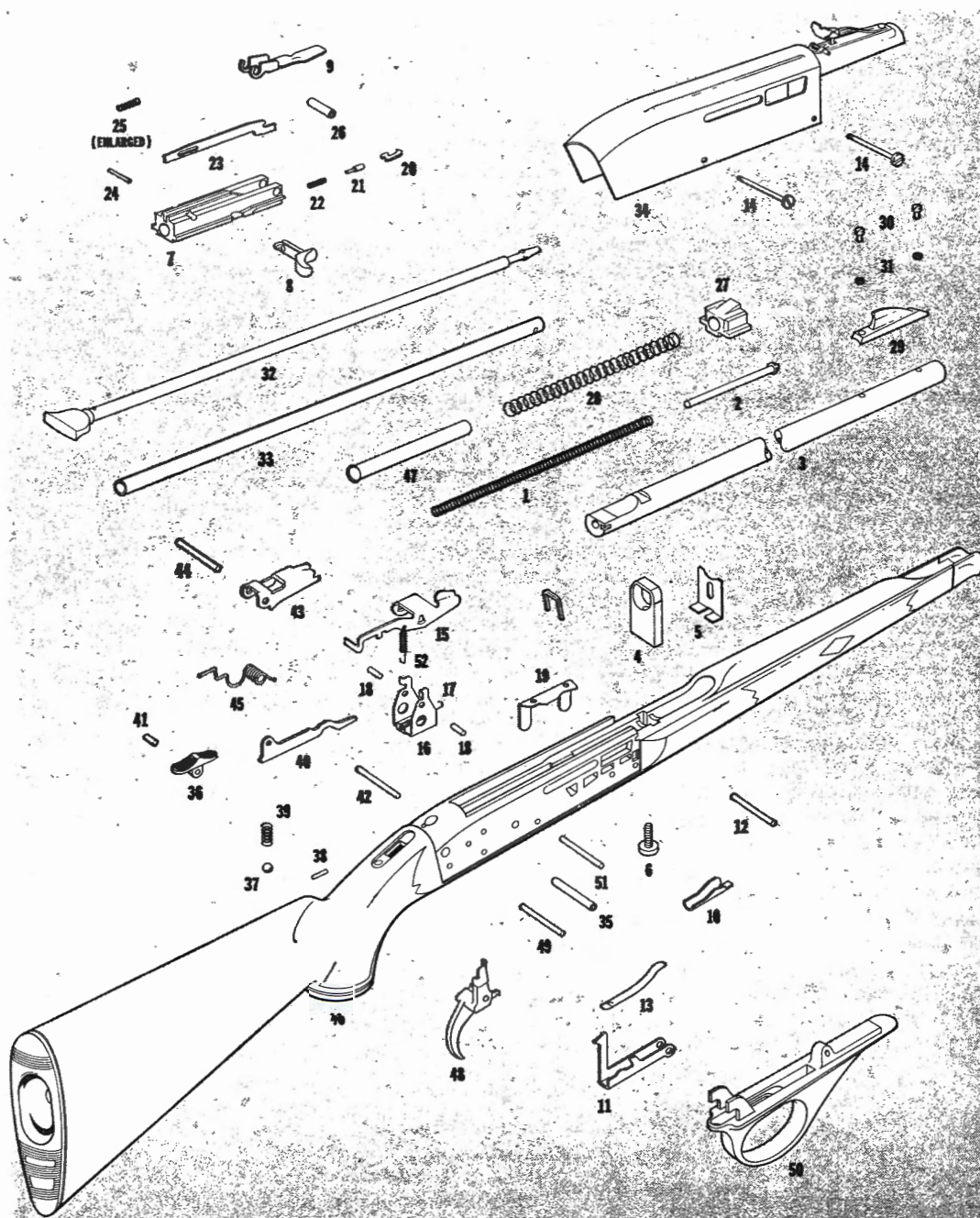
**7** Reassemble in reverse. Place striker spring sleeve (with flanged end rearward) into hole in stock assembly. Replace spring over sleeve. Slide striker rearward along bolt rails in stock assembly until spring enters hole in rear of striker and rearward motion of striker is stopped by sear (43). Pull trigger. Push downward on front end of sear and move striker rearward over sear until cocked. Release trigger. Sear will hold striker cocked in rearward position. When reassembling, receiver cover assembly to stock assembly, cartridge feed guide (9), must lie in forward position on barrel (arrow).





# Parts Legend

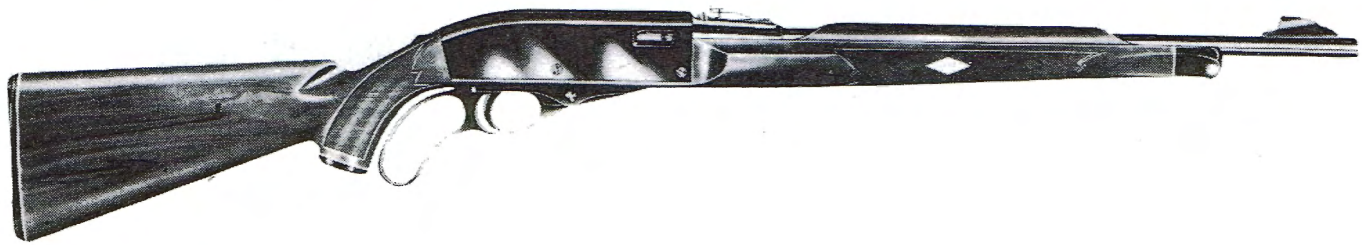
1. Action spring
2. Action spring plunger
3. Barrel
4. Barrel bracket
5. Barrel support
6. Barrel lock screw
7. Bolt
8. Bolt handle
9. Cartridge feed guide
10. Cartridge feed insert
11. Cartridge stop
12. Cartridge stop pin
13. Cartridge stop spring
14. Cover screw (2)
15. Disconnecter
16. Disconnecter pivot
17. Disconnecter pivot spring
18. Disconnecter pivot pin
19. Ejector
20. Extractor
21. Extractor plunger
22. Extractor spring
23. Firing pin
24. Firing pin retaining pin
25. Firing pin retractor spring
26. Firing pin stop pin
27. Firing pin striker
28. Firing pin striker spring
29. Front sight
30. Front sight screw (2)
31. Front sight washer (2)
32. Inner magazine tube assembly
33. Outer magazine tube
34. Receiver cover assembly
35. Rear cover screw bushing
36. Safety
37. Safety detent ball
38. Safety detent retaining pin
39. Safety detent spring
40. Safety lever
41. Safety lever pin



42. Safety lever cam pin
43. Sear
44. Sear assembly pin
45. Sear spring
46. Stock assembly
47. Striker spring sleeve

48. Trigger
49. Trigger assembly pin
50. Trigger guard
51. Trigger guard assembly pin
52. Trigger spring





Illustrations by FRANK G. HART.  
Text by LUDWIG OLSON

**R**EMINGTON Arms Co., Inc., produced many models of bolt-action, slide-action, and semi-automatic rifles through the years, but did not offer a lever-action repeater until 1962 when they brought their Nylon 76 Trail Rider rifle on the market. Chambered for .22 long rifle rimfire regular or high-speed cartridges, the Nylon 76 was designed for informal target shooting and small game hunting. Except for its lever-operated action, this lightweight repeater is basically similar to its companion arm, the Nylon 66 semi-auto-

matic rifle.

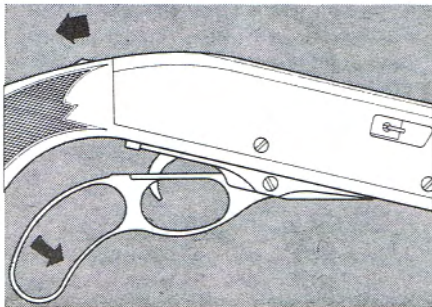
Like the Nylon 66, the Nylon 76 features a one-piece stock, receiver, and fore-end produced from high-strength Du Pont structural Nylon. Due to this unusual construction, troublesome fitting of stock to receiver is eliminated. Also, the nylon does not warp, and its self-lubricating properties reduce the need for oiling.

Other important features of the Nylon 76 are its short-stroke finger lever which aids speed of operation, a slide safety on top of the stock just behind the receiver, and a 14-round tubular magazine in the buttstock. Working the lever rotates a gear which moves a rack connected with the breech-

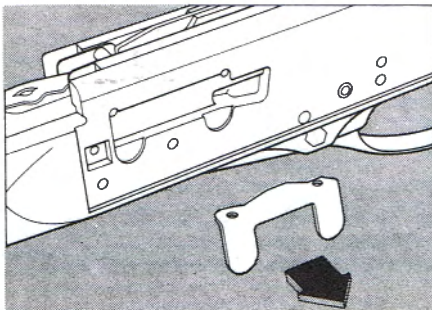
bolt. When the lever is fully closed, the breechbolt is locked by a locking bar pivoted in the rear of the receiver.

A square-top front sight is fitted to the lightweight barrel which is 19½" long. The square-notch open rear sight is fully adjustable for windage and elevation, and grooves on the receiver cover permit easy attachment of clamp-on telescope sight mounts.

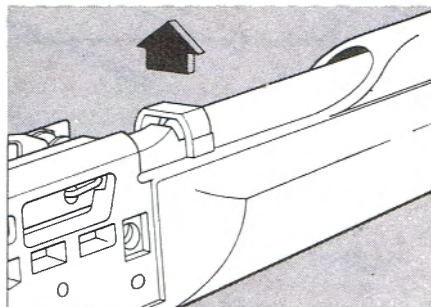
When first introduced, this rifle was offered with a Mohawk Brown stock and blued metal parts. Later, a version with an Apache Black stock was added. This version had a chrome-plated barrel, finger lever, and receiver cover. Both versions of the Nylon 76 were discontinued in 1964. ■



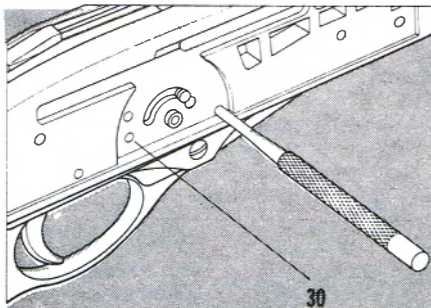
**1** Make sure rifle is unloaded before starting disassembly. When action is open, colored magazine follower should be visible through ejection port. Push safety (49) to the rear on safe position, and work lever (35) to cock rifle. Unscrew and remove the two cover screws (13), and lift receiver cover assembly (48) from stock (59).



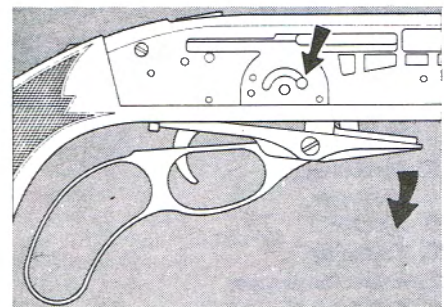
**2** Remove ejector (19) from well in left side of stock. Pull loosened rack (46) out of bolt (5). Partially open lever, and lift gear (34) from rear cover screw bushing (47).



**3** Remove barrel lock screw (3). Lift barrel bracket (2) to clear slot in top of barrel (1), and pull barrel forward, out of stock. Remove barrel bracket and barrel support (4).



**4** Pull bolt assembly forward out of stock. Drive out the two floor plate retaining pins (30) from right to left.



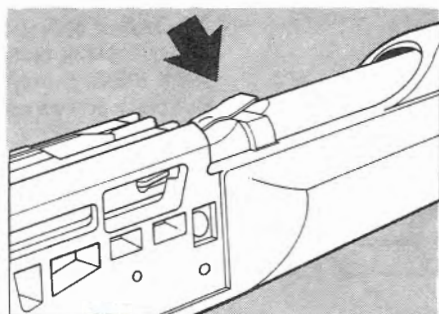
**5** Pull front of floor plate (29) downward. Open lever to position lever connector stud into circular slot (arrow) in stock. Push stud inward until it becomes disengaged from slot. Open lever and remove floor plate lever assembly. This is sufficient disassembly for normal cleaning. Reassemble in reverse. Lever must be unlatched from floor plate. Replace rear of floor plate into stock. Extend lever arm and press into stock. Position lever connector stud into circular slot in stock, push front of floor plate up into stock and close lever. Align holes in stock and floor plate and drive in floor plate retaining pins from left to right. When replacing bolt assembly, guide rear end of bolt push rod assembly (6) into striker spring sleeve (60). Lift front of locking bar (40) to enable locking bar release lever (41) to pass beneath.



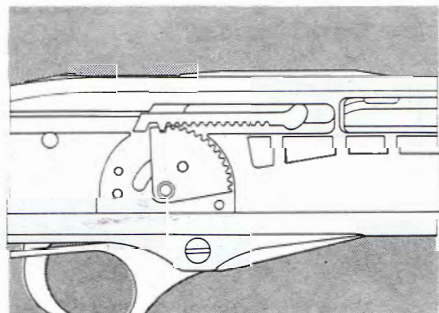
# REMINGTON NYLON 76 RIFLE

## PARTS LEGEND

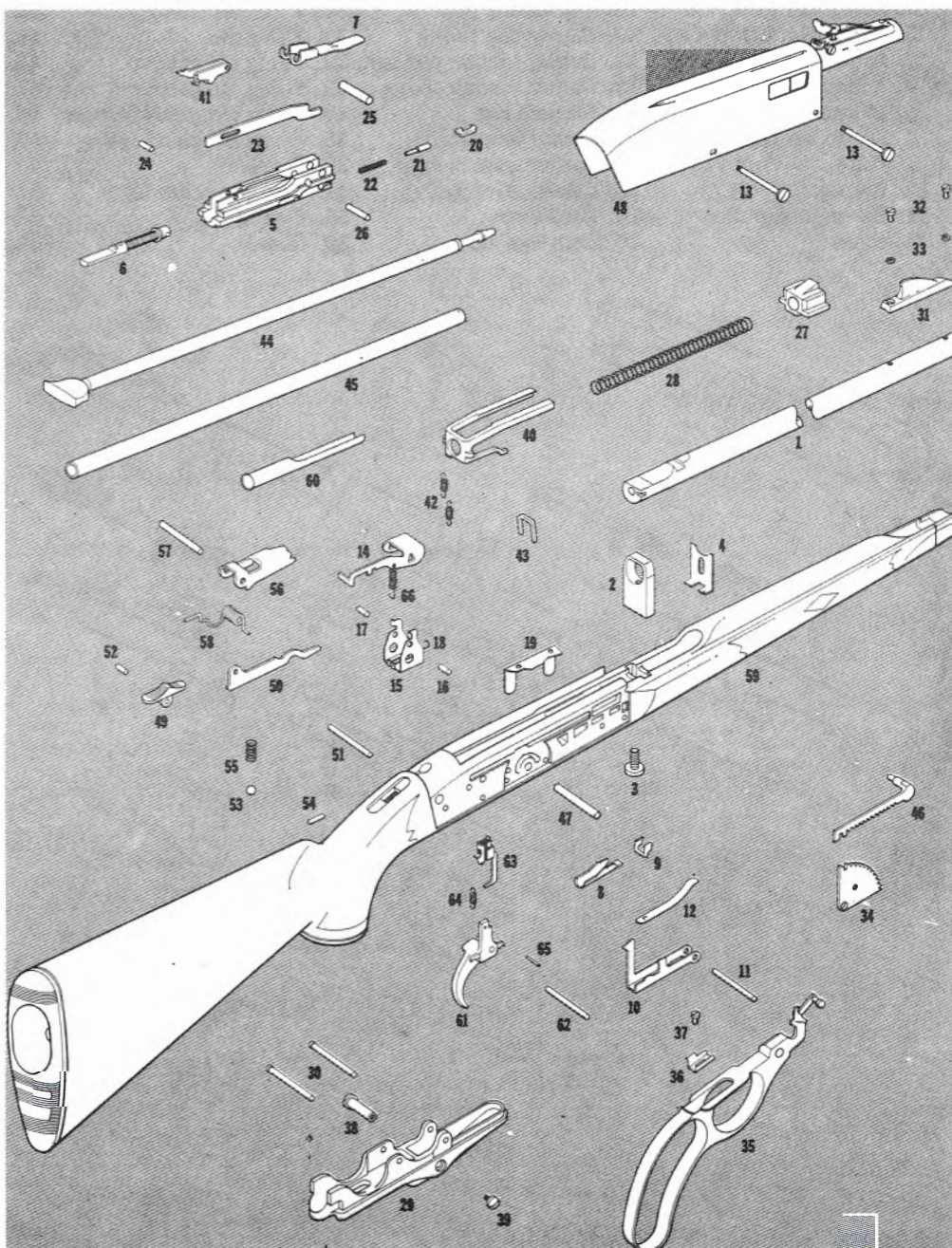
- |  |                                   |                               |                                 |
|--|-----------------------------------|-------------------------------|---------------------------------|
| 1. Barrel                              | 25. Firing pin stop pin, front    | 39. Lever pivot screw         | 53. Safety detent ball          |
| 2. Barrel bracket                      | 26. Firing pin stop pin, rear     | 40. Locking bar               | 54. Safety detent retaining pin |
| 3. Barrel lock screw                   | 27. Firing pin striker            | 41. Locking bar release lever | 55. Safety detent spring        |
| 4. Barrel support                      | 28. Firing pin striker spring     | 42. Locking bar spring (2)    | 56. Sear                        |
| 5. Bolt                                | 29. Floor plate                   | 43. Magazine lock             | 57. Sear assembly pin           |
| 6. Bolt push rod assembly              | 30. Floor plate retaining pin (2) | 44. Magazine assembly         | 58. Sear spring                 |
| 7. Cartridge feed guide                | 31. Front sight                   | 45. Outer magazine tube       | 59. Stock                       |
| 8. Cartridge feed insert               | 32. Front sight screw (2)         | 46. Rack                      | 60. Striker spring sleeve       |
| 9. Cartridge feed insert spring        | 33. Front sight washer (2)        | 47. Rear cover screw bushing  | 61. Trigger                     |
| 10. Cartridge stop                     | 34. Gear                          | 48. Receiver cover assembly   | 62. Trigger assembly pin        |
| 11. Cartridge stop pin                 | 35. Lever                         | 49. Safety                    | 63. Trigger cap                 |
| 12. Cartridge stop spring              | 36. Lever latch                   | 50. Safety lever              | 64. Trigger cap spring          |
| 13. Cover screw (2)                    | 37. Lever latch screw             | 51. Safety lever cam pin      | 65. Trigger cap retaining pin   |
| 14. Disconnecter                       | 38. Lever pivot bushing           | 52. Safety lever pin          | 66. Trigger spring              |
| 15. Disconnecter pivot                 |                                   |                               |                                 |
| 16. Disconnecter pivot pin, right hand |                                   |                               |                                 |
| 17. Disconnecter pivot pin, left hand  |                                   |                               |                                 |
| 18. Disconnecter pivot spring          |                                   |                               |                                 |
| 19. Ejector                            |                                   |                               |                                 |
| 20. Extractor                          |                                   |                               |                                 |
| 21. Extractor plunger                  |                                   |                               |                                 |
| 22. Extractor spring                   |                                   |                               |                                 |
| 23. Firing pin                         |                                   |                               |                                 |
| 24. Firing pin retaining pin           |                                   |                               |                                 |



**6** Cartridge feed guide (7) must face forward along barrel. Replace gear and rack. Stud on rack extends through stock and bolt into recess in bolt push rod.

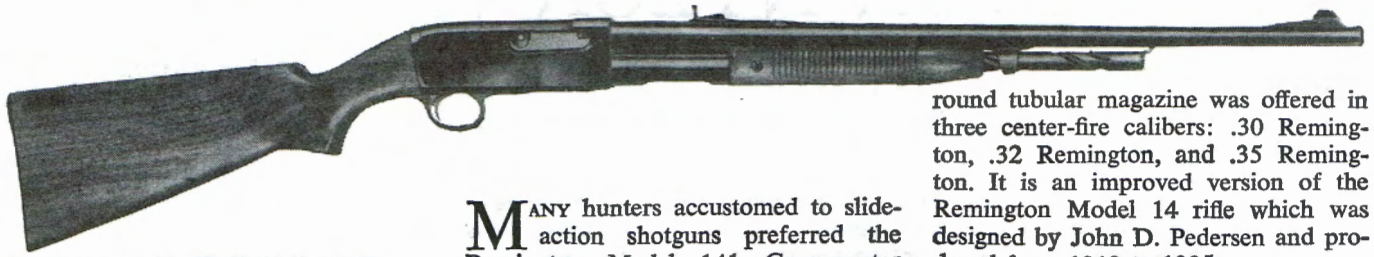


**7** Engage large teeth of rack and gear. Hold both parts in place, replace ejector, and reassemble receiver cover assembly to stock.





# REMINGTON MODEL 141 GAMEMASTER



Illustrations by FRANK G. HART.  
Text by LUDWIG OLSON

**M**ANY hunters accustomed to slide-action shotguns preferred the Remington Model 141 Gamemaster slide-action rifle for hunting deer and similar-sized big game. Introduced in 1936, this fast-firing repeater with five-

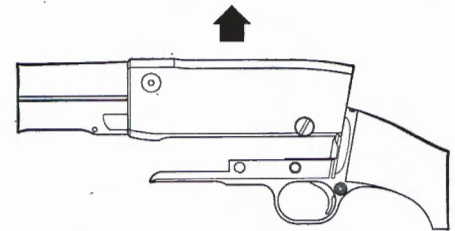
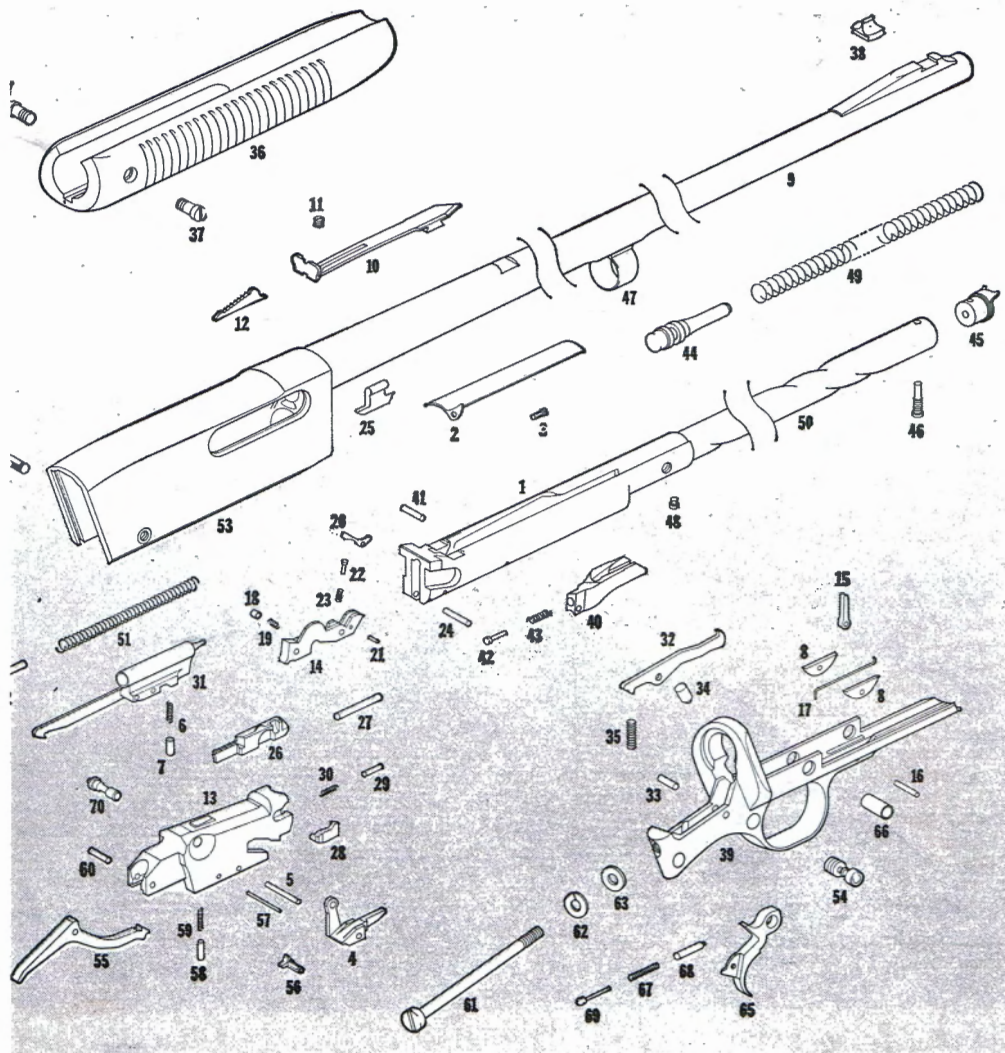
round tubular magazine was offered in three center-fire calibers: .30 Remington, .32 Remington, and .35 Remington. It is an improved version of the Remington Model 14 rifle which was designed by John D. Pedersen and produced from 1912 to 1935.

In addition to its trim, attractive lines and favorable handling qualities, the Model 141 features a solid breech with

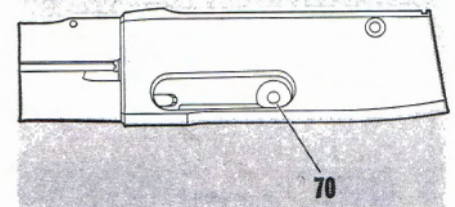
## PARTS LEGEND

- |                                   |                              |                              |                          |                            |
|-----------------------------------|------------------------------|------------------------------|--------------------------|----------------------------|
| 1. Action bar                     | 12. Bar sight step           | 26. Ejector                  | 40. Loading door         | 55. Sear                   |
| 2. Action bar cover               | 13. Breechblock              | 27. Ejector rod              | 41. Loading door pin     | 56. Sear lock              |
| 3. Action bar cover screw         | 14. Carrier                  | 28. Extractor                | 42. Loading door plunger | 57. Sear lock pin          |
| 4. Action bar lock                | 15. Carrier dog              | 29. Extractor plunger        | 43. Loading door spring  | 58. Sear lock plunger      |
| 5. Action bar lock pin            | 16. Carrier dog pin          | 30. Extractor spring         | 44. Magazine follower    | 59. Sear lock spring       |
| 6. Action bar lock spring         | 17. Carrier dog spring       | 31. Firing pin               | 45. Magazine plug        | 60. Sear pin               |
| 7. Action bar lock spring plunger | 18. Carrier friction plunger | 32. Firing pin catch         | 46. Magazine plug screw  | 61. Stock bolt             |
| 8. Action bar support (2)         | 19. Carrier friction spring  | 33. Firing pin catch pin     | 47. Magazine ring        | 62. Stock bolt lock washer |
| 9. Barrel                         | 20. Carrier lever            | 34. Firing pin catch plunger | 48. Magazine screw       | 63. Stock bolt washer      |
| 10. Bar sight                     | 21. Carrier lever pin        | 35. Firing pin catch spring  | 49. Magazine spring      | 64. Takedown screw         |
| 11. Bar sight elevation screw     | 22. Carrier lever plunger    | 36. Fore-end                 | 50. Magazine tube        | 65. Trigger                |
|                                   | 23. Carrier lever spring     | 37. Fore-end screw (2)       | 51. Mainspring           | 66. Trigger bushing        |
|                                   | 24. Carrier pin              | 38. Front sight              | 52. Mainspring plug      | 67. Trigger spring         |
|                                   | 25. Cartridge stop           | 39. Guard                    | 53. Receiver             | 68. Trigger spring cap     |
|                                   |                              |                              | 54. Safety               | 69. Trigger spring rod     |
|                                   |                              |                              |                          | 70. Unlocking plunger      |

**Note:** Stock, Buttplate, and Buttplate screws not shown.



**1** Before disassembly, unload the magazine and clear the chamber. Loosen the takedown screw (64) and pull out to the stop. Slide the guard (39) from the receiver (53).



**2** Move the fore-end back and forward to cock action. Turn the rifle bottom side up. Press the unlocking plunger (70) and open the action. Tilt the rear end of the breechblock (13) upward slightly, and slide the fore-end (36) forward. Lift the breechblock from the receiver. This is sufficient takedown for normal cleaning.



the receiver closed except for an ejection port on the right side. This protects the user from rearward escaping gas, and keeps out snow, dirt, and other foreign matter.

Another desirable feature of this hammerless, striker-fired rifle is a spiral groove in the magazine tube to tilt the cartridges slightly and thereby prevent the bullet points from contacting the primers of cartridges ahead. The magazine moves back and forth with the action bar to assist positive feeding of cartridges.

Unlike most rifles, the Model 141 has a single locking lug integral with the upper front of the breechblock. The initial rearward motion of the action

bar causes the front of the breechblock to be cammed downward and disengages the locking lug from the locking shoulder in the receiver. To open the action when the rifle is cocked, it is necessary to press the unlocking plunger in the right side of the breechblock and move the fore-end rearward. The cross-bolt safety in the trigger guard is convenient to operate with the trigger finger.

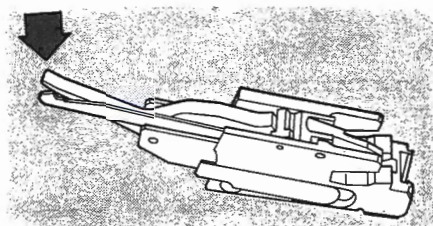
After turning out the takedown screw on the left side of the receiver, the rifle can be taken down to facilitate transport, cleaning, and lubrication. This can be done easily without use of tools.

Most metal parts of the Model 141 are blued machined steel, and the qual-

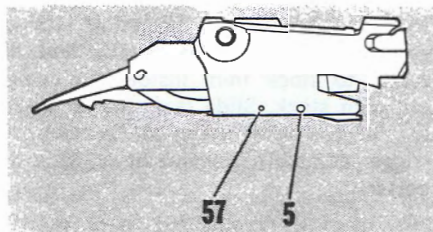
ity of workmanship and finish is excellent. The walnut stock and fore-end are well proportioned and nicely finished.

In addition to the 141A Standard Grade, this rifle was offered in three higher grades: 141B Special, 141D Peerless, and 141F Premier, all with 24" barrel. The 141R carbine featured an 18½" barrel, and was available only in cal. .30 Remington and .32 Remington.

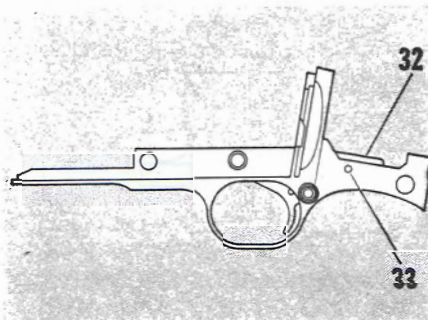
While the Model 141 performed well and proved popular through the years, it was discontinued in 1950 to make way for the Remington Model 760 slide-action rifle, which is much better suited than the Model 141 for production by modern techniques. ■



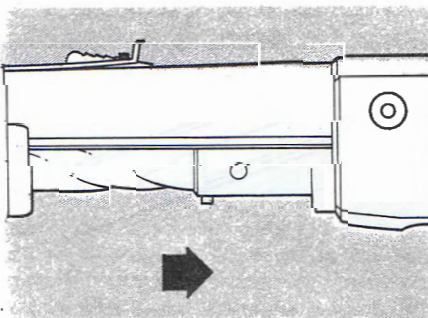
**3** To disassemble further, grasp the breechblock with the bottom up and the sear (55) extending outward. Strike the sear to disengage it and uncock the firing pin (31). Move the ejector (26) to middle position and lift from the breechblock. Remove the ejector rod (27) and unlocking plunger.



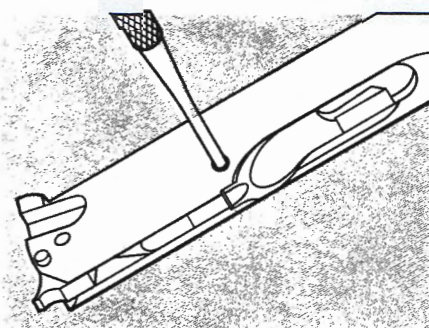
**4** Drive out the sear lock pin (57), remove the sear lock (56), sear lock spring (59), and plunger (58). Drive out the action bar lock pin (5) and remove the action bar lock (4), action bar lock spring (6), and plunger (7). Drive out the sear pin (60). Carefully remove the punch and ease out the sear. Pull out the main-spring plug (52), mainspring (51), and firing pin. Insert a thin-bladed screwdriver between the extractor (28) and plunger (29). Turn the blade slightly to force the plunger back against the spring (30), and move the extractor from the breechblock. Drive out the carrier dog pin (16) from right to left, and lift out the carrier dog (15) and spring (17). Lift out the two action bar supports (8). Unscrew the buttplate screws and remove the buttplate. Insert a long-bladed screwdriver into the stock hole and remove the stock bolt (61), washer (63), and lock washer (62). Pull the guard from stock.



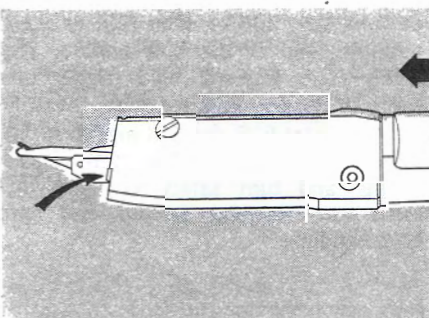
**5** Drive out the firing pin catch pin (33), and remove the firing pin catch (32), spring (35), and plunger (34). Drive out the trigger bushing (66), and remove the trigger (65), trigger spring (67) with rod (69), and cap (68). Push the safety (54) from the guard. Unscrew the two fore-end screws (37) and magazine plug screw (46). Ease out the magazine plug (45), magazine spring (49), and follower (44).



**6** Slide the action bar (1), and magazine tube (50) rearward in the receiver and fore-end. Unscrew the action bar cover screw (3) and remove the action bar cover (2) from the front of the receiver. Move the fore-end rearward as far as it will go. Then, slide the action bar and magazine tube completely forward. Tip the barrel (9) downward to remove the cartridge stop (25). Pull the action bar and magazine tube from the rear of the receiver and remove the fore-end.



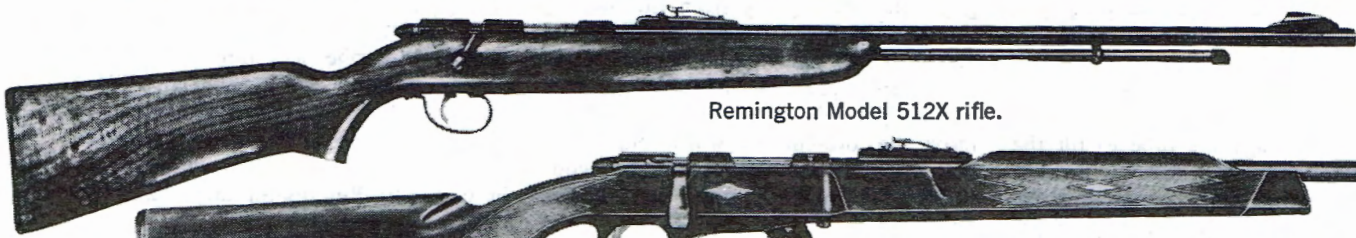
**7** Drive out the loading door pin (41), and remove the loading door (40), loading door spring (43), and plunger (42). Drive out the carrier pin (24), and remove the carrier (14) with carrier friction plunger (18), and spring (19). Drive out the small carrier lever pin (21), and lift out the carrier lever (20), carrier lever spring (23), and plunger (22).



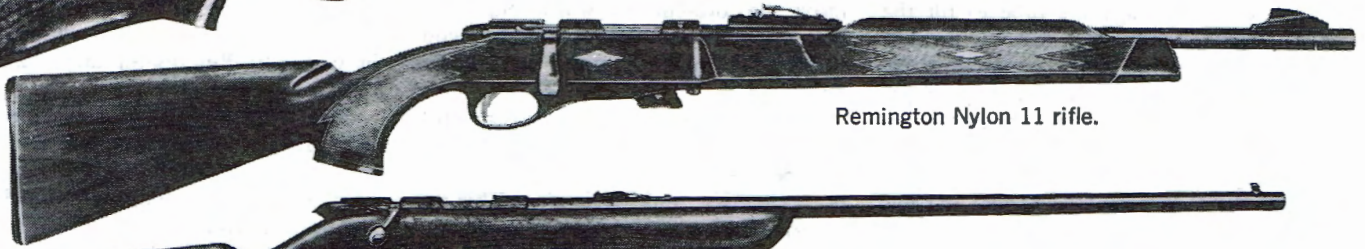
**8** Reassemble in reverse. In doing so, fit the lug on the breechblock into the recess in the receiver. Move the fore-end rearward to engage the action bar with the breechblock while pressing the ejector protruding from the rear of the breechblock (arrow). Move the breechblock and action bar forward together. Note: The firing pin must be cocked before reassembly of the breechblock to the receiver. To do so, press rearward on the flat lower front of the firing pin until cocked.



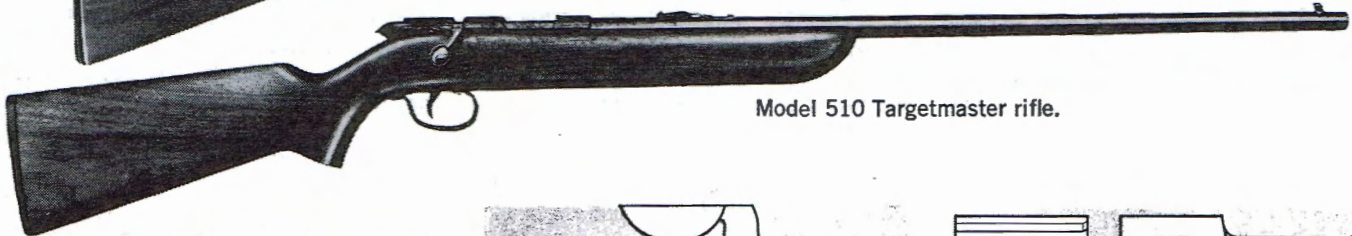
# REMINGTON MODEL 510 RIFLE



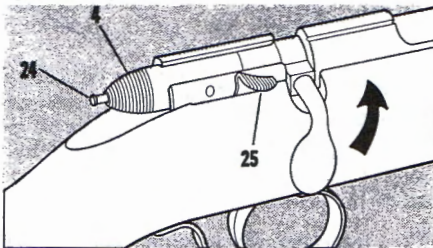
Remington Model 512X rifle.



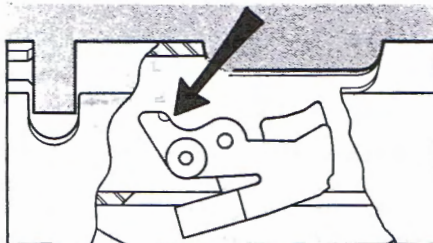
Remington Nylon 11 rifle.



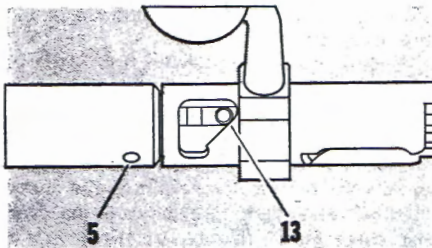
Model 510 Targetmaster rifle.



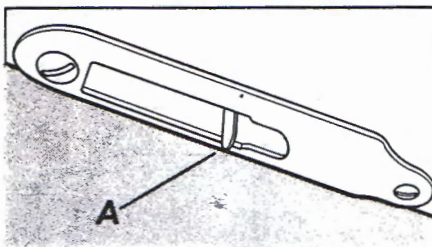
**1** Before starting to disassemble rifle, unload it. Lift bolt handle (3), push safety lever (25) forward, pull trigger, and withdraw bolt assembly from rifle. When replacing bolt assembly, firing mechanism must be cocked. This is indicated by red band on safety indicator (24) protruding from rear of bolt sleeve (4). If mechanism is uncocked, cock it by pushing bolt into receiver (20) as far as possible, and lifting bolt handle. With safety lever forward, hold trigger rearward, and slide bolt assembly into rifle. In the Model 510, forward motion of bolt will be stopped by safety (23). Release trigger and turn safety lever rearward. Push bolt assembly forward, and lower bolt handle.



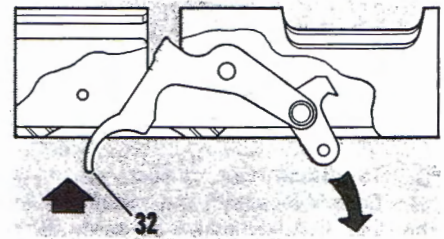
**2** When replacing Model 512 bolt assembly, cartridge stop (EE) must be in upward position. If not, reach into receiver opening with small tool and press downward on rear of stop. In all three models, firing mechanism will uncock if safety lever is forward and bolt handle is lowered while pulling trigger.



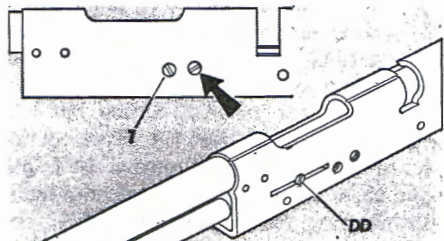
**3** To strip bolt assembly, uncock by rotating bolt handle until firing pin cam pin (13) moves to forward position at base of handle. Tap out bolt sleeve pin (5). Use care as bolt sleeve is under tension of mainspring. Remove bolt sleeve, mainspring (15), and safety indicator. Slide mainspring plunger (16) from bolt (2). Push out firing pin cam pin, and remove bolt handle assembly and firing pin assembly (12). Drive out extractor pins (10) and remove extractors (8 and 9), and extractor spring (11).



**4** Loosen takedown screw (30) and remove barrel and action from stock (29). In Model 511, press magazine lock (A) rearward and remove magazine before removing barrel and action. Unscrew safety screw (26) and safety lever (25). Remove safety (23), trigger spring plunger (37), and spring (36) from receiver. Then, unscrew sear pivot screw (27). In Model 510, remove sear spacing collar (28). In Model 512, remove cartridge stop (EE), carrier (FF), carrier spacer bushing (GG), and carrier tension spring (HH).



**5** Drive out trigger pin (35). Push trigger assembly (32) upward into receiver. Then, push assembly forward and remove sear first through bottom of receiver. In Model 511, unscrew magazine lock screw (B), and remove magazine lock and spacer (C). Magazine lock of early Model 511 rifles is attached directly to stock from inside and comes out with stock. Slide rear receiver insert (E) forward in receiver before removing trigger assembly. Remove insert from receiver.



**6** Unscrew ejector screw (7) and remove ejector (6). When replacing sear pivot screw, assemble to full depth, back off one-half turn and re-stake in place (arrow). In Model 512, unscrew cartridge retainer spring screw (DD) and remove cartridge retainer spring (CC) and cartridge retainer (BB) from left of receiver. Unscrew magazine screw (KK) and remove magazine (JJ). Reassemble in reverse.



**T**HE Remington Model 510 Targetmaster .22 rimfire bolt-action rifle introduced in 1939 was an inexpensive single-shot arm intended for informal target shooting and small game hunting. Chambered for .22 short, long, and long rifle cartridges, this rifle was also available in a smoothbore version for firing shot cartridges. It was produced chiefly in the 510A version with open rear sight, but was also offered in a 510P version with aperture rear sight at extra cost.

Among the outstanding features of the Model 510 were its 25" round barrel, one-piece walnut stock, cock-on-opening action, dual locking lugs, and

twin extractors. When the rifle was cocked, a red-tipped firing indicator projected from the rear of the bolt sleeve. The safety on the right rear of the action engaged automatically as the bolt was pulled back.

Two Remington .22 rimfire bolt-action repeating rifles were brought on the market shortly after introduction of the Model 510. One was the Model 511 Scoremaster with detachable box magazine, while the other was the Model 512 Sportmaster with tubular magazine under the barrel. Equipped with a manual safety that did not engage automatically when the bolt was retracted, these rifles were chambered for .22 short, long, and long rifle cartridges. They were basically similar to the Model 510 which resulted in a "family of rifles" that facilitated production.

In 1962, the Models 510, 511, and 512 were replaced by the Nylon 10 single-shot, Nylon 11 box-magazine, and Nylon 12 tubular-magazine rifles. Basically similar to the 510 series, these new rifles featured one-piece nylon stocks and trigger guards, 24" barrels, improved sights, and a flat bolt handle.

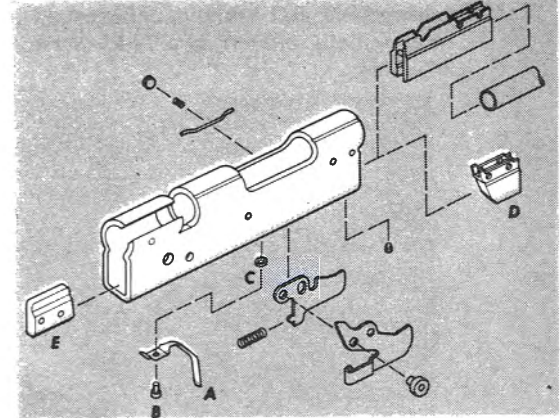
A further change occurred in 1964 when the nylon series bolt-action rifles were replaced by the Models 510X, 511X, and 512X .22 rimfire rifles with walnut stocks. These new models had barrels and sights similar to those of the nylon series bolt-action rifles, but were otherwise the same as the older Models 510, 511 and 512.

On introduction of the Remington 580 series .22 rimfire rifles in 1967, the 510 series was discontinued. ■

#### Parts Legend

##### Model 510

- |                         |                                       |                               |
|-------------------------|---------------------------------------|-------------------------------|
| 1. Barrel               | 12. Firing pin assembly               | 26. Safety screw              |
| 2. Bolt                 | 13. Firing pin cam pin                | 27. Sear pivot screw          |
| 3. Bolt handle assembly | 14. Front sight                       | 28. Sear spacing collar       |
| 4. Bolt sleeve          | 15. Mainspring                        | 29. Stock                     |
| 5. Bolt sleeve pin      | 16. Mainspring plunger                | 30. Takedown screw            |
| 6. Ejector              | 17. Rear sight                        | 31. Takedown screw escutcheon |
| 7. Ejector screw        | 18. Rear sight screw (2)              | 32. Trigger assembly          |
| 8. Extractor, left      | 19. Rear sight step                   | 33. Trigger guard             |
| 9. Extractor, right     | 20. Receiver                          | 34. Trigger guard screw (2)   |
| 10. Extractor pin (2)   | 21. Receiver insert                   | 35. Trigger pin               |
| 11. Extractor spring    | 22. Receiver insert retaining pin (2) | 36. Trigger spring            |
|                         | 23. Safety                            | 37. Trigger spring plunger    |
|                         | 24. Safety indicator                  |                               |
|                         | 25. Safety lever                      |                               |



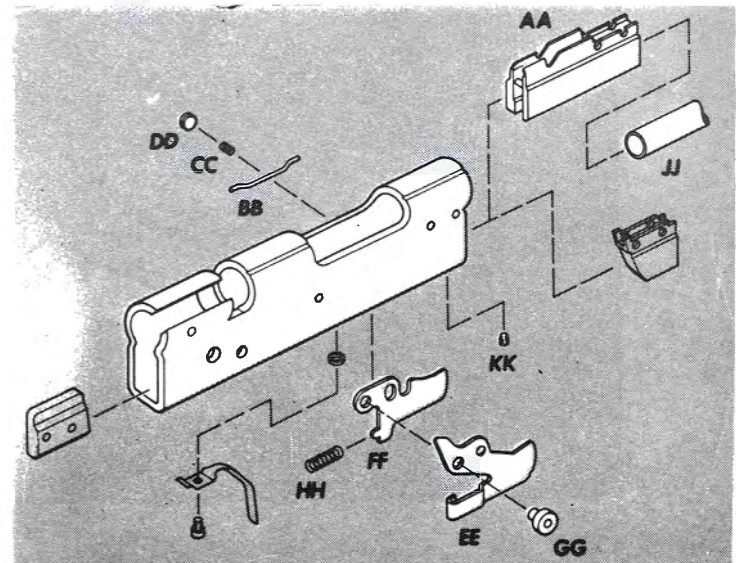
#### Parts Legend

##### Model 511 (above)

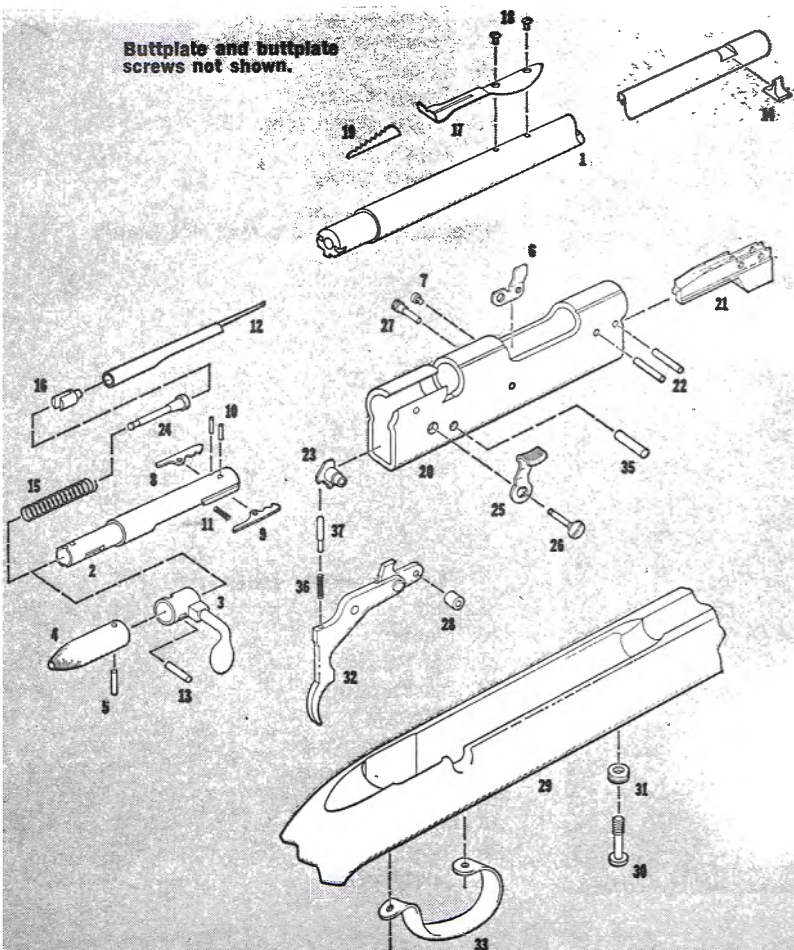
- |                        |                           |
|------------------------|---------------------------|
| A. Magazine lock       | C. Magazine lock spacer   |
| B. Magazine lock screw | D. Receiver insert, front |
|                        | E. Receiver insert, rear  |

##### Model 512 (below)

- |                                     |                            |
|-------------------------------------|----------------------------|
| AA. Receiver insert                 | FF. Carrier                |
| BB. Cartridge retainer              | GG. Carrier Spacer bushing |
| CC. Cartridge retainer spring       | HH. Carrier tension spring |
| DD. Cartridge retainer spring screw | JJ. Magazine               |
| EE. Cartridge stop                  | KK. Magazine screw         |

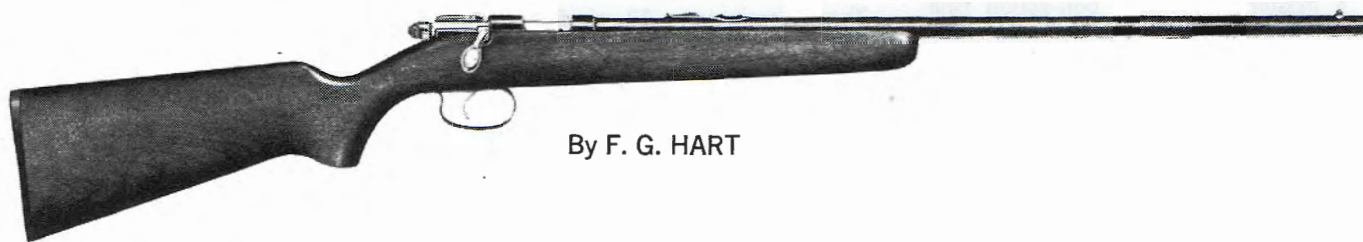


Buttplate and buttplate screws not shown.





# REMINGTON MODEL 514A RIFLE



By F. G. HART

**O**FFERED as a simple reliable arm at low cost, the Remington Model 514 .22 rimfire single-shot rifle was introduced in 1948. This turnbolt takedown rifle fires .22 short, long, and long rifle regular and high speed cartridges interchangeably and without adjustment. It was initially offered in a 514A version

with open rear sight and a 514P version with an aperture rear sight on the receiver. Both have a 24 $\frac{3}{4}$ " round barrel and a one-piece walnut stock.

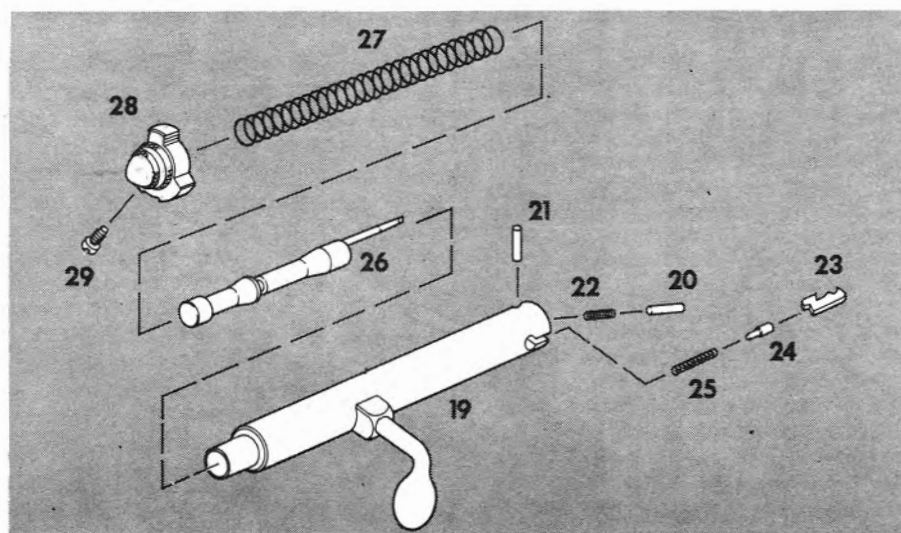
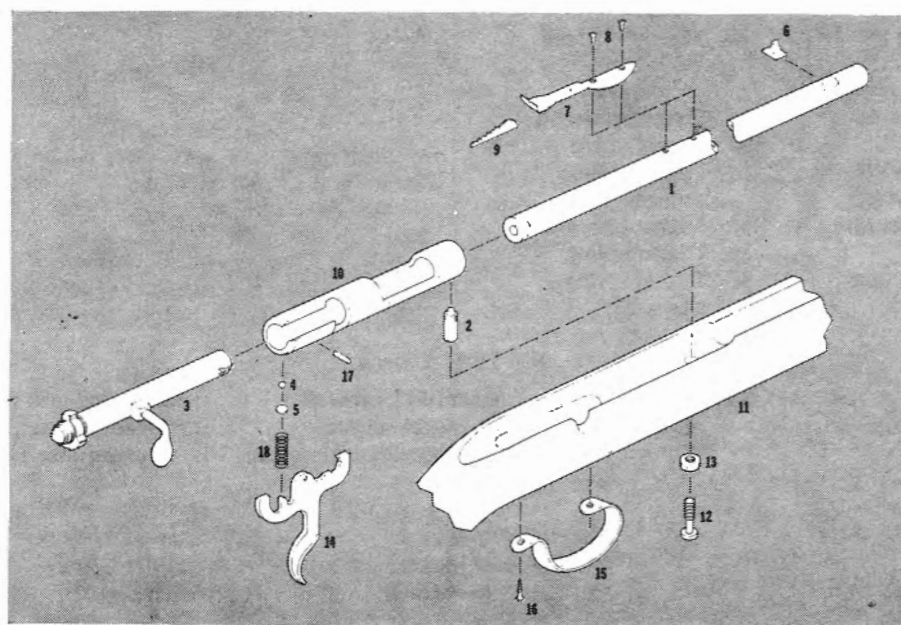
Several changes were made in the Model 514 through the years. The 514P version was discontinued, and the barrel length of the 514A was reduced to 20".

A 514 BC Boy's Carbine version with 20" barrel and a stock one inch shorter than that of the 514A was also offered, but was discontinued after several years. Current versions of the Model 514 are the 514A with 24" barrel and the 514BR Boy's Rifle with 24" barrel and a stock one inch shorter than that of the 514A.

## Parts Legend

1. Barrel
2. Barrel lock screw
3. Bolt assembly
4. Bolt detent ball
5. Bolt detent retainer
6. Front sight
7. Rear sight leaf
8. Rear sight screw (2)
9. Rear sight step
10. Receiver
11. Stock
12. Takedown screw
13. Takedown screw escutcheon
14. Trigger
15. Trigger guard
16. Trigger guard screw (2)
17. Trigger pin
18. Trigger spring

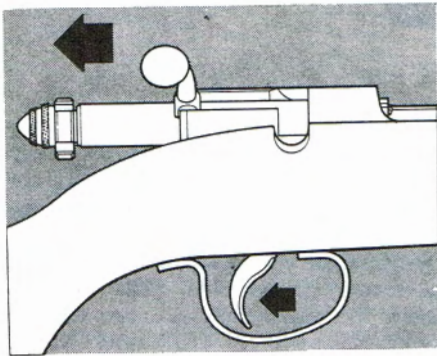
Note: Buttplate and screws not shown.



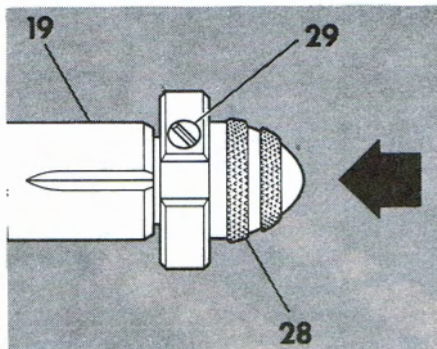
## Bolt Assembly Parts List

19. Bolt
20. Ejector
21. Ejector pin
22. Ejector spring
23. Extractor
24. Extractor plunger
25. Extractor spring
26. Firing pin
27. Mainspring
28. Safety
29. Safety screw

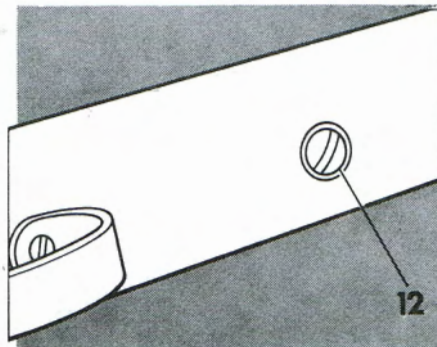




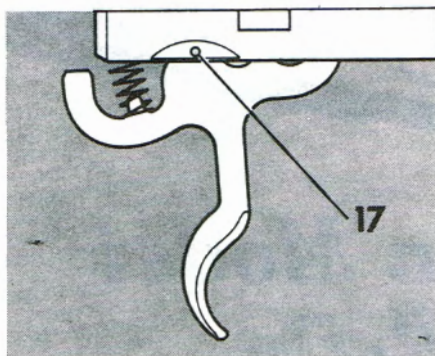
**1** Lift bolt handle and pull bolt assembly (3) rearward. Check chamber to make sure rifle is not loaded. Pull trigger (14) and remove bolt assembly from rifle.



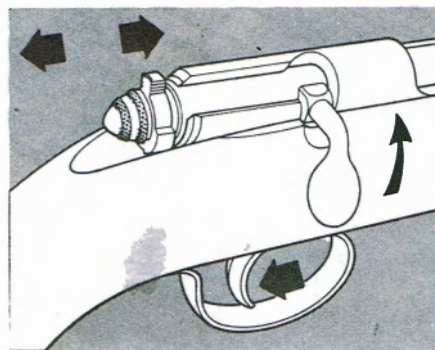
**2** To disassemble bolt assembly, push and hold safety (28) forward against tension of mainspring (27), and unscrew safety screw (29). Slowly release forward pressure on safety and remove safety from bolt (19). Remove mainspring. Drive out ejector pin (21) and remove ejector (20) and ejector spring (22) from face of bolt. Disassembly of extractor (23) is not recommended unless necessary for repair or replacement. Force small screwdriver or knife blade between extractor and extractor plunger (24), and push plunger rearward. Pry extractor out of its slot in bolt. CAUTION: Extractor plunger is under spring load and may fly out of bolt with force when extractor is removed. Care should be taken to prevent this. Remove extractor plunger and spring (25).



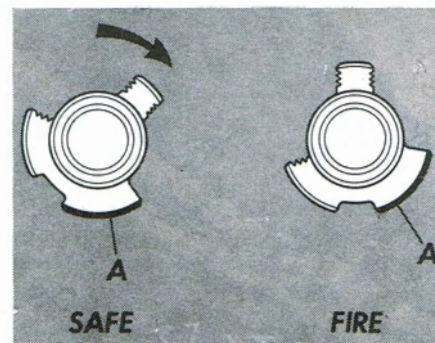
**3** Unscrew takedown screw (12) until action can be lifted from stock (11). Leave screw in stock to prevent loss.



**4** Drive out trigger pin (17). Remove trigger, trigger spring (18), bolt detent retainer (5), and bolt detent ball (4). Use care when disassembling these parts since retainer and ball may fall out of receiver when pressure of trigger spring is removed. NOTE: When reassembling safety to bolt, make sure that safety screw is screwed into safety as far as possible.



**5** Tension should be relieved from mainspring when rifle is not in use. This is done by lifting bolt handle and allowing bolt assembly to travel rearward approximately  $\frac{5}{8}$ ". After making sure there is no cartridge in chamber, hold trigger rearward and move bolt assembly forward approximately  $\frac{1}{4}$ ". Release trigger and close bolt.



**6** Rifle is on safe when safety is rotated to right (clockwise) about  $\frac{1}{8}$  of a turn. The red safety indicator (A) is then concealed. Safety is in fire position when red indicator is visible on right side.

## CAL. .35 CLIP

*I have a cartridge clip of the type used to load a Mauser or Springfield rifle. However, it has only a single lug-like projection on either side instead of 2, and it is marked ".35 Cal." Is it for the .35 Whelen cartridge?—H.W.T.*

**Answer:** The clip is for the .35 Remington cartridge, not the .35 Whelen, and it



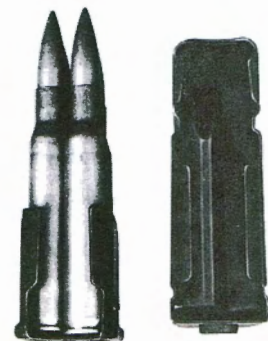
Cal. .35 Remington cartridge clip. Arrow shows single lug-like projection

is used for loading the cal. .35 Remington Model 8 autoloading rifle. It can also be used for loading the cal. .35 Remington Model 81 rifle, which is an improved version of the Model 8.—L.O.

## Clip Or Magazine

*The M1 rifle is described as clip-fed, and the M14 as magazine-fed. I always thought these terms meant the same thing. What is the distinction?*

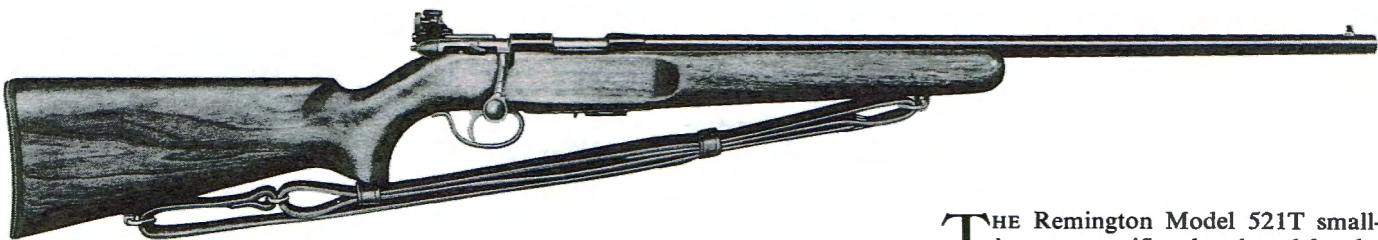
**Answer:** The basic difference is that a magazine contains a spring-driven follower to feed cartridges and a clip does not. Magazines may be built into a rifle such as the box magazine in Mauser-type bolt actions, or it may be detachable such as the M1 carbine or M14 box magazines. Most semi-automatic pistols have detachable box magazines, commonly, but incorrectly, called clips.



M1 clip (l.) and M14 magazine. Clip can only hold cartridges, magazine has spring-driven follower to feed cartridges.

There is a wide variety of clips, used mostly to charge the magazines of military bolt-action rifles. The M14 rifle and the M1 carbine magazines both can be charged with clips. The M1 rifle clip is inserted into the action along with the cartridges but the follower mechanism is built into the rifle.—W.E.P.



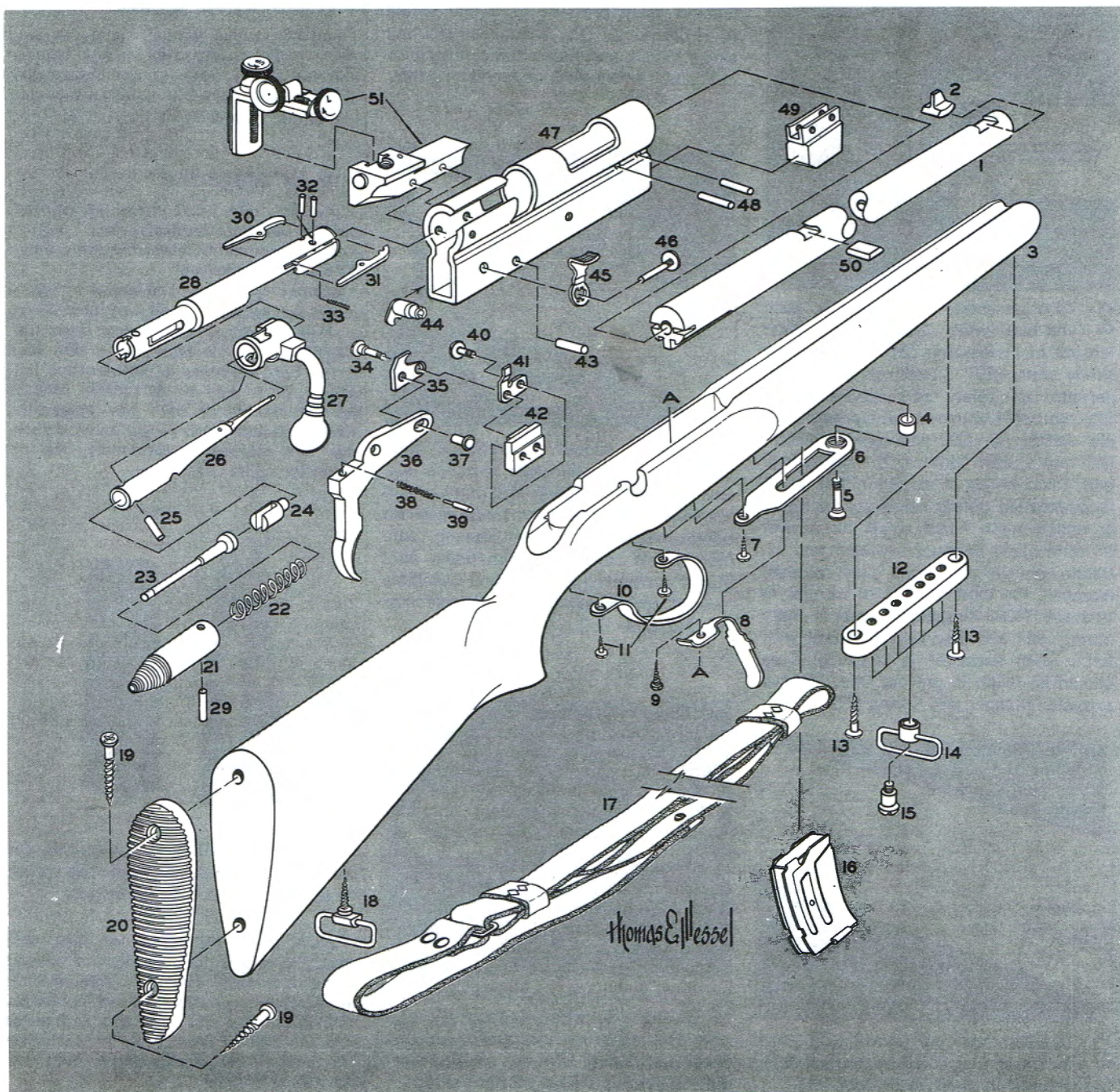


# Remington Model 521T Rifle

By Thomas E. Wessel

THE Remington Model 521T small-bore target rifle, chambered for the cal. .22 long rifle cartridge, was first offered by Remington Arms Co., in 1947. Designed for young target shooters, this moderately-priced rifle filled the gap below the more expensive and heavier Remington Model 513T and Model 40X target rifles.

THOMAS E. WESSEL of Whippany, N. J., is a technical illustrator long interested in firearms.





The turnbolt action features dual locking lugs and extractors and is of cock-on-opening type. A safety indicator pin protrudes from the end of the bolt when the action is cocked. The detachable box magazine holds 6 rounds.

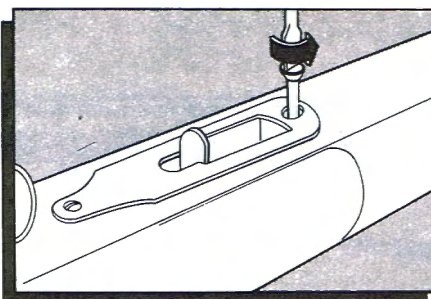
The American walnut stock is of high-comb target type with the full close pistol grip and beavertail fore-end preferred by target shooters. Sling swivels are standard and the front swivel is adjustable to 7 positions to accommodate differences in arm length. A 1" military type leather sling is furnished with each rifle.

Sighting equipment is a Patridge square front blade and Lyman 57RS aperture rear with 1/4-minute click adjustments for windage and elevation.

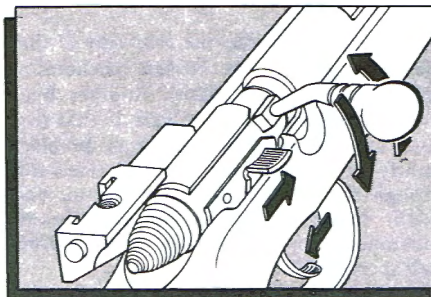
Over-all length of the Model 521T is 43"; barrel length, 25"; weight, approximately 7 lbs.

### Parts List

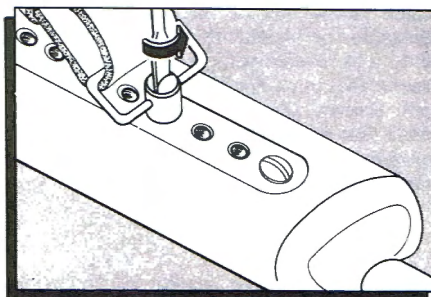
1. Barrel
2. Front sight
3. Stock
4. Takedown screw escutcheon
5. Takedown screw
6. Magazine guide plate
7. Magazine guide plate screw
8. Magazine lock
9. Magazine lock screw
10. Trigger guard
11. Trigger guard screw (2)
12. Front swivel base
13. Front swivel base screw (2)
14. Front swivel
15. Front swivel screw
16. Magazine assembly
17. Sling strap assembly
18. Rear swivel
19. Buttplate screw (2)
20. Buttplate
21. Bolt sleeve
22. Mainspring
23. Safety indicator
24. Mainspring plunger
25. Firing pin cam pin
26. Firing pin
27. Bolt handle
28. Bolt
29. Bolt sleeve pin
30. Extractor, left
31. Extractor, right
32. Extractor pin (2)
33. Extractor spring
34. Sear pivot screw
35. Sear
36. Trigger
37. Sear stud
38. Trigger spring
39. Trigger spring plunger
40. Ejector screw
41. Ejector
42. Receiver insert, rear
43. Trigger pin
44. Safety
45. Safety lever
46. Safety screw
47. Receiver
48. Barrel lock pin (2)
49. Receiver insert, front
50. Barrel filler block
51. Rear micrometer sight, Lyman 57RS



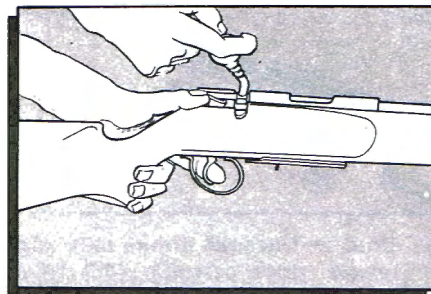
- 1** Takedown of Model 521T is accomplished by removing box magazine (16) and loosening takedown screw (5) just forward of magazine opening in magazine guide plate (6). Stock can now be removed from action



- 2** CAUTION: INSURE THERE IS NO CARTRIDGE IN CHAMBER PRIOR TO THIS OPERATION. Tension on mainspring (22) may be relieved when the rifle is not in use by rotating bolt handle (27) upward, then pushing safety lever (45) forward to 'Fire' position while holding trigger (36) back and simultaneously rotating bolt handle downward



- 3** Position of front swivel (14) can be changed to any one of 7 holes in front swivel base (12) by unscrewing front swivel screw (15) and repositioning it where desired



- 4** To remove bolt (28), press release button on micrometer sight (51) and raise or remove it. Open action, push safety lever (45) to 'Fire' position, hold trigger full rearward, and pull bolt from receiver. This is sufficient disassembly for cleaning

## A MAN TO REMEMBER

### JOHN HARRIS HALL

*Invented the Hall rifle*

Born—Portland, Maine, Jan. 21, 1778

Died—Moberly, Mo., Feb. 26, 1841

**J**OHAN H. HALL was born of a family prominent in Maine politics. After attending public school in Portland, he was apprenticed as a boatbuilder in nearby Yarmouth. Naturally inventive, he designed a new sloop with a flat bottom and exceptionally deep keel. A stock company was formed to finance the construction of a vessel named the *Yankee* to be built according to his design. The ship never returned from its maiden voyage, and it was generally believed that the keel caused it to founder. This apparently terminated Hall's shipbuilding.

About the time of the *Yankee* disaster, Hall applied for a patent on a breech-loading firearm which he had invented with help from William Thornton, the Washington architect. The patent was granted in 1811. Hall's system involved a pivoted breechblock which contained both the lock mechanism and the chamber. It could be tipped up to load, then locked down in position with a spring catch. It was a simple mechanism but was subject to a somewhat excessive leakage of gas and flame from the joint between the barrel and chamber and a tendency for the catch lever to gall at its shoulders.

Hall offered his invention to the government and produced a quantity of rifles for test purposes. Most of these were probably made at Hall's shop on Richardson's Wharf in Portsmouth. Finally, the United States decided to adopt the new rifle as an official arm, and in 1819 production began in the National Armory at Harpers Ferry with Hall to supervise production.

Hall designed the machinery for making the rifle on an assembly line basis with completely interchangeable parts. These machines were installed at Harpers Ferry, and his guns represent the first American-made firearms with complete interchangeability, though others such as Whitney and North had made significant strides in that direction earlier. Both rifles and carbines were manufactured on the Hall system at the Armory and under private contract for some 25 years, first with flintlocks and later with percussion. As such they were the first breech-loaders formally adopted and issued in quantity as a standard military arm.

In 1840 Hall went to Missouri to be with his son.—HAROLD L. PETERSON





# Remington Model 540X

Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

**T**HE Remington Model 540X cal. .22 bolt-action target rifle introduced in 1969 is an outstanding performer. Although this single-shot arm chambered for the .22 long rifle cartridge weighs only about 9 lbs. complete with sling and iron sights, it is easily capable of firing 1" 10-shot groups at 100 yds. with match ammunition.

An important reason for this rifle's fine performance is its high-quality, 26" medium-weight barrel which is full floating in the fore-end. The bore is rifled by a modern hammer-forging process that gives a very smooth finish.

Some other important reasons for the fine performance are secure lock-up of the bolt and extremely fast lock time of only 1.4 milliseconds. The locking system consists of six lugs arranged on the bolt body in three series of two each. These engage shoulders in the bridge of the thick-walled, machined steel receiver.

The separate, non-rotary bolt head carries twin extractors and the firing pin. A

bolt plug screwed into the rear end of the bolt body retains the striker mechanism and serves as a gas shield. Another feature that helps protect the user is that the front edge of the bolt head is beveled slightly to permit gas escape sideward through the ejection port. This is an excellent feature since rimfire case heads sometimes burst, especially when firing high speed ammunition.

A nylon plastic loading tray in the receiver bottom guides the cartridge into the chamber without deforming the bullet. The thumb-operated safety is on the right side of the action. When engaged, it locks the trigger mechanism but not the bolt. It is thus possible to remove a live round from the chamber with the trigger mechanism locked.

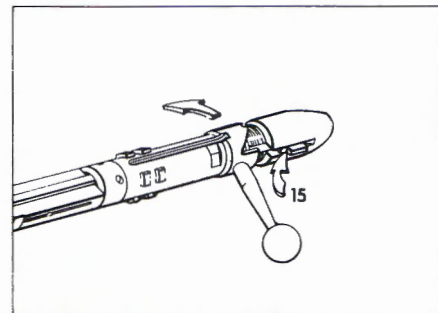
Like many other modern rifles, the trigger mechanism of the Model 540X is adjustable for weight of pull, sear engagement, and overtravel. It is necessary to remove the stock for access to the adjustment screws. The manufacturer recommends that no adjustments be made in sear engagement and overtravel as these were adjusted properly at the factory.

Sighting equipment consists of a Redfield No. 75 micrometer aperture rear sight and No. 63 globe front sight with interchangeable inserts. The barrel is drilled and tapped for scope blocks, and the receiver is grooved for clamp-on scope mounts. Height of sight line for metallic sights is the same as for target telescope sights. The rifle was available with or without iron sights.

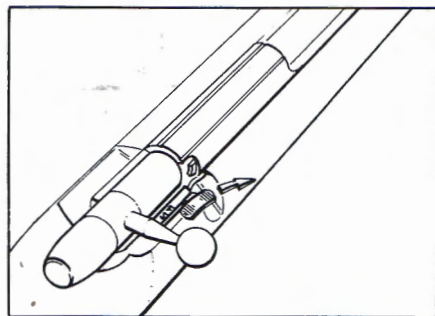
The one-piece birch stock has a cheekpiece, full pistol grip, shelf for the right thumb, and a wide groove behind the grip to give clearance for the palm of the hand. A full-length accessory rail in the bottom of the semi-beavertail fore-end adapts the rifle for use with a handstop-swivel block and palm rests.

Another desirable feature is a buttplate adjustable for length of pull, vertical movement, and right or left cant. These adjustments are made easily with an Allen wrench furnished with the rifle. Length of pull is adjustable from approximately 12¾" to 15½".

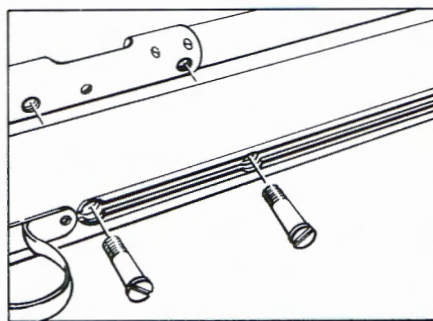
In 1975, the Model 540X rifle was replaced by the Model 540XR which features an improved stock designed especially for position shooting. ■



**3** Clamp bolt plug (7) in a padded vise. While pushing cocking piece (15) rearward into bolt plug with a punch or screwdriver, unscrew bolt body assembly (5) from bolt plug, and remove striker assembly (45). Clamp striker (44) in a padded vise, drive out striker cross pin (46) with a punch, and remove cocking piece, striker washer (47), and main-spring (30). Use caution since cocking piece is under spring pressure. Drift out bolt assembly pin (4), and separate bolt head (6) from bolt body assembly. Use small screwdriver to pry extractor spring off bolt head, and remove firing pin (20) and extractors (17) (18). Reassemble in reverse.



**1** Pull bolt all the way to the rear and make sure rifle is unloaded. Push safety (35) completely forward beyond "F" marking on receiver (33), and remove bolt assembly from rifle.

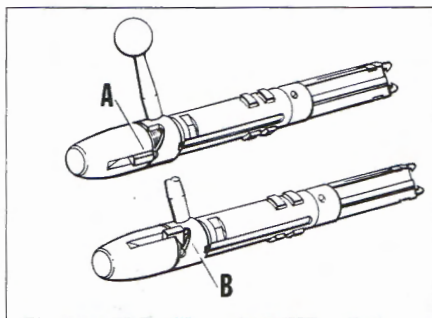
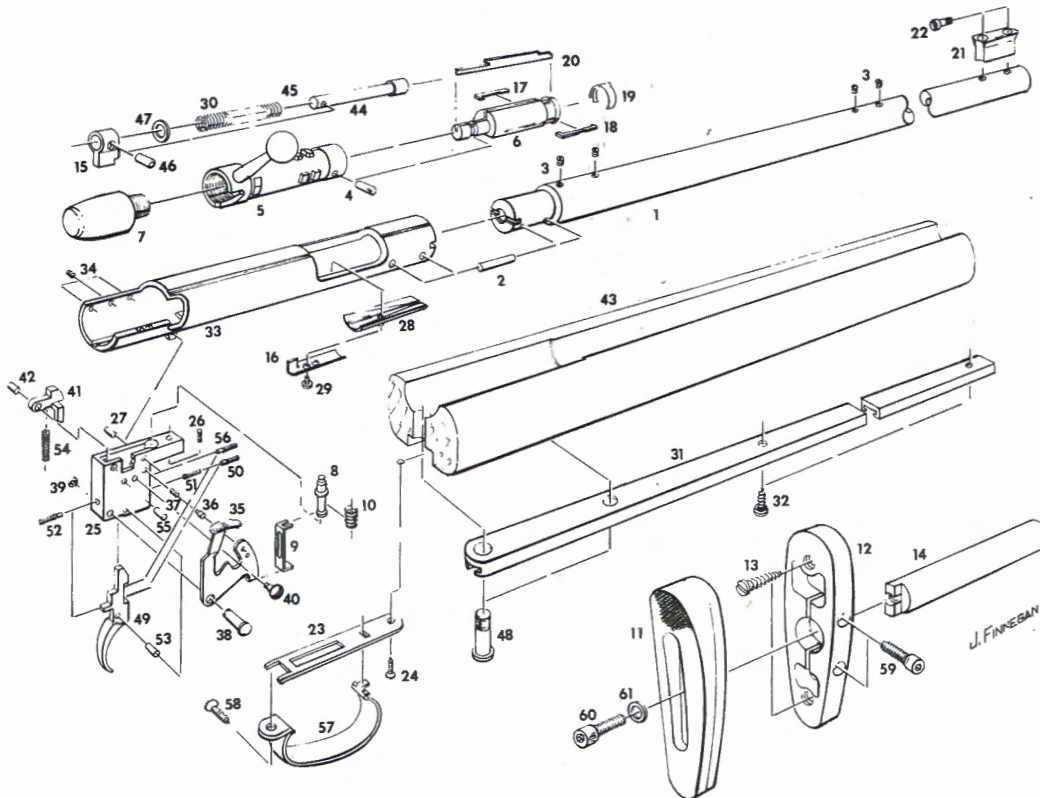


**2** Unscrew takedown screws (48), and remove stock assembly (43) from barreled action.

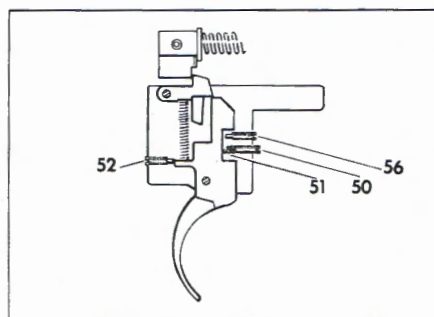


## PARTS LEGEND

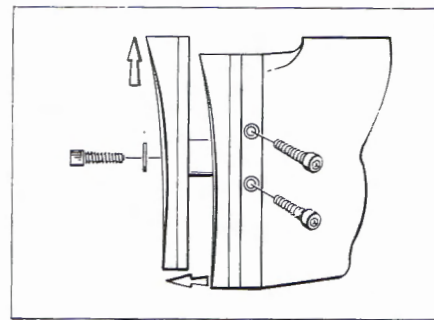
- |                            |                             |                             |                                       |
|----------------------------|-----------------------------|-----------------------------|---------------------------------------|
| 1. Barrel                  | 6. Bolt head                | 14. Buttplate tube assembly | 22. Front sight base screw (2)        |
| 2. Barrel assembly pin (2) | 7. Bolt plug                | 15. Cocking piece           | 23. Floor plate                       |
| 3. Barrel plug screw (4)   | 8. Bolt stop                | 16. Ejector                 | 24. Floor plate screw                 |
| 4. Bolt assembly pin       | 9. Bolt stop release        | 17. Extractor left hand     | 25. Housing                           |
| 5. Bolt body assembly      | 10. Bolt stop spring        | 18. Extractor right hand    | 26. Housing lock screw                |
|                            | 11. Butt pad assembly       | 19. Extractor spring        | 27. Housing pin                       |
|                            | 12. Butt pad base           | 20. Firing pin              | 28. Loading platform                  |
|                            | 13. Butt pad base screw (2) | 21. Front sight base        | 29. Loading platform screw            |
|                            |                             |                             | 30. Mainspring                        |
|                            |                             |                             | 31. Rail                              |
|                            |                             |                             | 32. Rail screw (2)                    |
|                            |                             |                             | 33. Receiver assembly                 |
|                            |                             |                             | 34. Receiver plug screw (3)           |
|                            |                             |                             | 35. Safety                            |
|                            |                             |                             | 36. Safety detent                     |
|                            |                             |                             | 37. Safety detent spring              |
|                            |                             |                             | 38. Safety pivot pin                  |
|                            |                             |                             | 39. Safety pivot pin retaining washer |
|                            |                             |                             | 40. Safety retainer screw             |
|                            |                             |                             | 41. Sear                              |
|                            |                             |                             | 42. Sear pin                          |
|                            |                             |                             | 43. Stock assembly                    |
|                            |                             |                             | 44. Striker                           |
|                            |                             |                             | 45. Striker assembly                  |
|                            |                             |                             | 46. Striker cross pin                 |
|                            |                             |                             | 47. Striker washer                    |
|                            |                             |                             | 48. Takedown screw (2)                |
|                            |                             |                             | 49. Trigger                           |
|                            |                             |                             | 50. Trigger adjustment screw          |
|                            |                             |                             | 51. Trigger adjustment spring         |
|                            |                             |                             | 52. Trigger engagement screw          |
|                            |                             |                             | 53. Trigger pin                       |
|                            |                             |                             | 54. Trigger spring                    |
|                            |                             |                             | 55. Trigger spring retaining pin      |
|                            |                             |                             | 56. Trigger stop screw                |
|                            |                             |                             | 57. Trigger guard                     |
|                            |                             |                             | 58. Trigger guard screw               |
|                            |                             |                             | 59. Tube clamp screw (2)              |
|                            |                             |                             | 60. Tube screw                        |
|                            |                             |                             | 61. Tube screw washer                 |



**4** Firing mechanism must be cocked before replacing bolt in receiver. Cocking piece must be engaged in notch (position A) at rear of bolt body assembly. If cocking piece is in position B, push it rearward with screwdriver or punch, and turn bolt to engage cocking piece with notch. Also, rib on bottom of bolt head must be aligned with groove on bolt body assembly. Start bolt assembly in receiver with handle at two o'clock position, press safety all the way forward, and push bolt toward barrel.



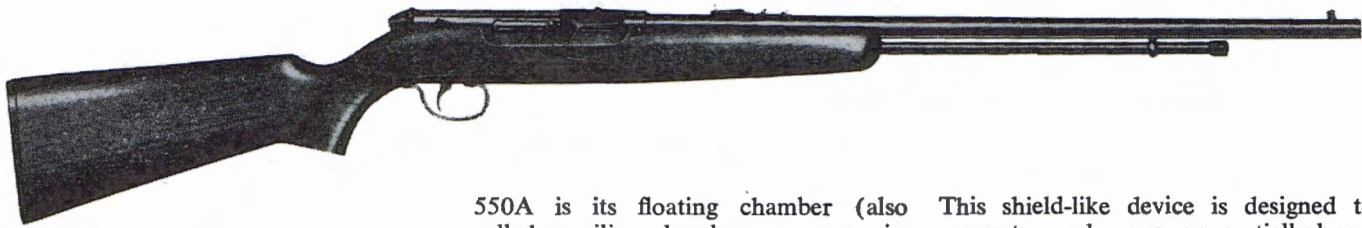
**5** Turn trigger adjustment screw (50) in against spring (51) to increase weight of pull, or out to lighten pull. It is recommended that trigger engagement screw (52) and trigger stop screw (56) not be turned as they are adjusted properly at the factory.



**6** Buttplate assembly is adjustable for length of pull, vertical movement, and right or left cant by using an Allen wrench. Adjustments can be made in vertical movement after loosening tube screw (60), and in length of pull and cant after loosening tube clamp screws (59). Retighten screws after making adjustments.



# REMINGTON MODEL 550A RIFLE



Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

**T**HE Remington Model 550A semi-automatic rifle was introduced in 1941. Of takedown design, this blowback-operated rifle for small game hunting and informal target shooting fires .22 short, long, and long-rifle regular and high-velocity cartridges interchangeably and without adjustment. Capacity of the tubular magazine under the 24" round barrel is 15 long rifle, 17 long, or 22 short cartridges.

An unusual feature of the Model

550A is its floating chamber (also called recoiling chamber or power piston) which gives reliable functioning with the wide variety of ammunition used. Designed by David M. "Carbine" Williams of Godwin, N.C., this device is actually a hollow piston which contains the chamber and fits in the breech end of the barrel. When the rifle is fired, powder gas enters the space between the front of the hollow piston and barrel, and the gas pressure drives the piston rearward. This gives greater rearward force than would be obtained with a normal blowback system without the piston.

Another feature of this rifle is a sheet steel deflector fastened to the receiver adjacent to the ejection port.

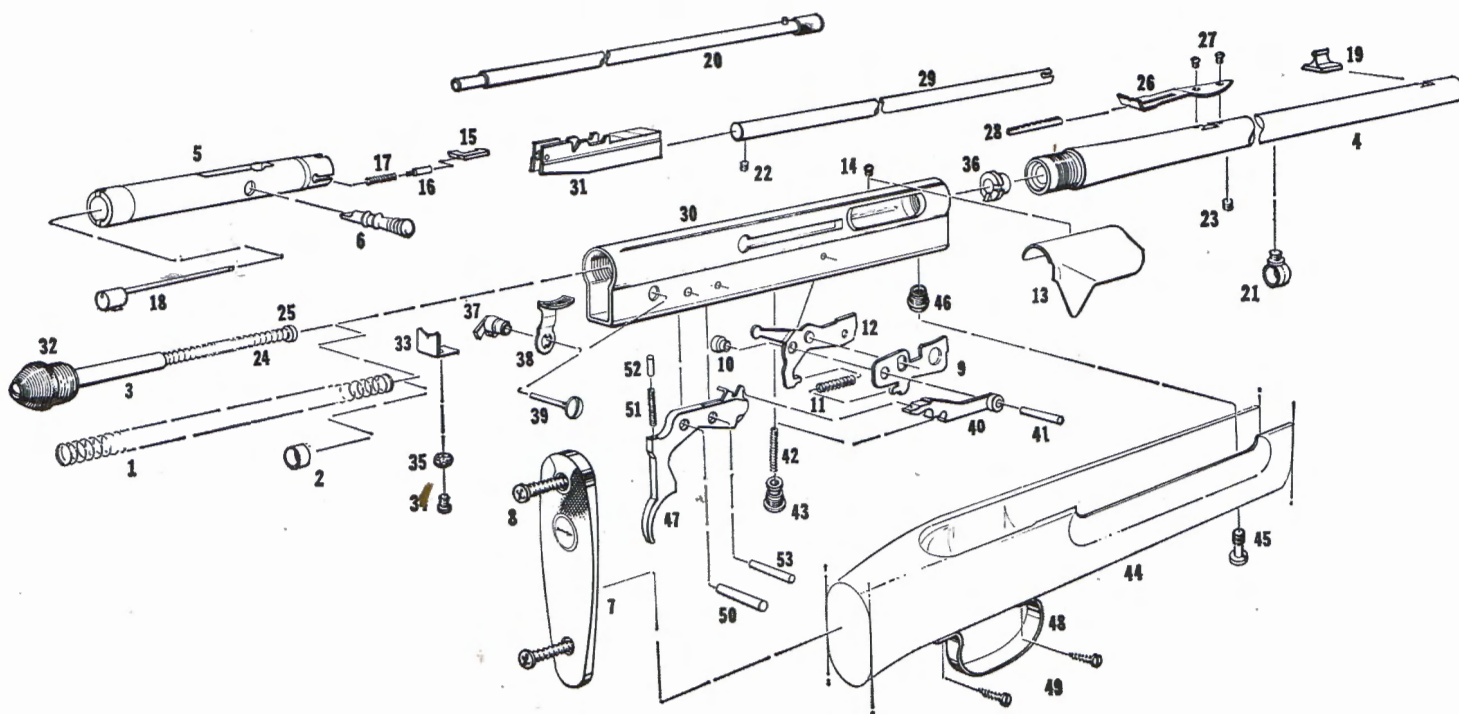
This shield-like device is designed to prevent powder gas or partially-burnt powder from blowing rearward toward the user.

The thumb-operated safety is on the right side of the receiver. When the safety is forward in fire position, a red dot on the receiver is exposed.

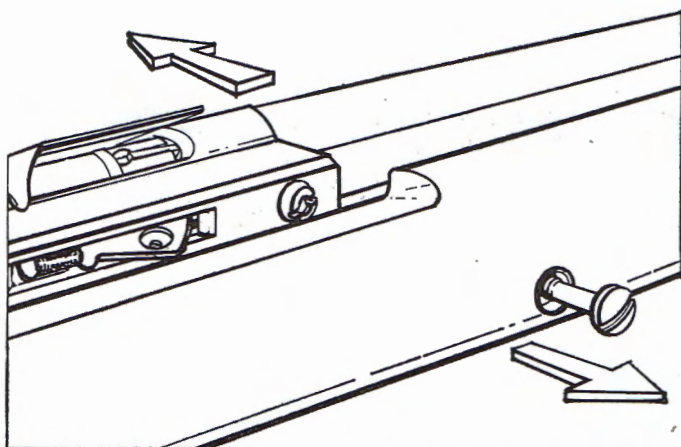
In addition to open sights on the barrel, the receiver has dovetail grooves on top to permit attachment of clamp-on telescope sight mounts. The one-piece American walnut stock is fitted with a checkered black-plastic buttplate. Most metal parts are blued.

While the Model 550A is an excellent rifle, it does not have the trim lines of Remington's newer .22 rimfire autoloaders. It was discontinued in 1970.

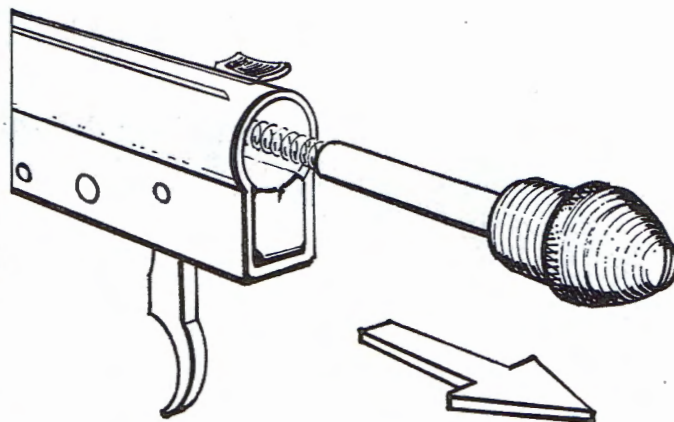
- |                            |                                  |  |                             |
|----------------------------|----------------------------------|--|-----------------------------|
| 1. Action spring           | 15. Extractor                    | 27. Open-sight screw (2)                     | 40. Sear assembly           |
| 2. Action-spring bushing   | 16. Extractor plunger            | 28. Open-sight step                          | 41. Sear pin                |
| 3. Action-spring guide     | 17. Extractor spring             | 29. Outer-magazine tube                      | 42. Sear spring             |
| 4. Barrel                  | 18. Firing-pin assembly          | 30. Receiver assembly                        | 43. Sear-spring case        |
| 5. Bolt                    | 19. Front sight                  | 31. Receiver-insert assembly                 | 44. Stock assembly          |
| 6. Bolt handle             | 20. Inner magazine-tube assembly | 32. Receiver plug                            | 45. Takedown screw          |
| 7. Buttplate               | 21. Magazine ring                | 33. Receiver-plug retainer                   | 46. Takedown-screw bushing  |
| 8. Buttplate screws (2)    | 22. Magazine screw               | 34. Receiver-plug retainer screw             | 47. Trigger assembly        |
| 9. Carrier                 | 23. Magazine-tube support screw  | 35. Receiver-plug retainer-screw lock washer | 48. Trigger guard           |
| 10. Carrier-spacer bushing | 24. Mainspring                   | 36. Recoiling chamber                        | 49. Trigger-guard screw (2) |
| 11. Carrier-tension spring | 25. Mainspring plunger           | 37. Safety                                   | 50. Trigger pin             |
| 12. Cartridge stop         | 26. Open-sight leaf              | 38. Safety lever                             | 51. Trigger spring          |
| 13. Deflector              |                                  | 39. Safety screw                             | 52. Trigger-spring plunger  |
| 14. Deflector screw        |                                  |  | 53. Trigger-stop pin        |



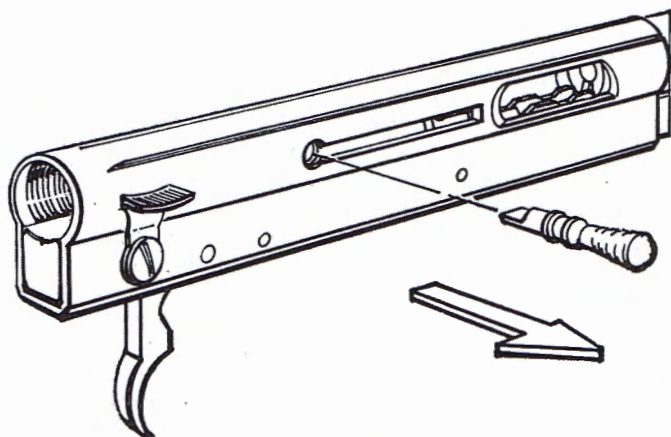




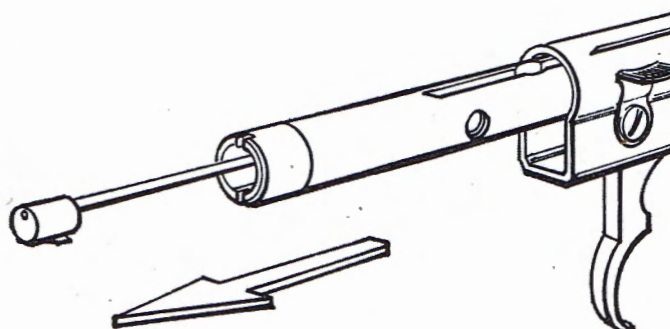
**1** Before disassembling rifle, check chamber and magazine to be sure they are unloaded. Unscrew takedown screw (45) from bottom of stock. Remove stock assembly (44) from rifle.



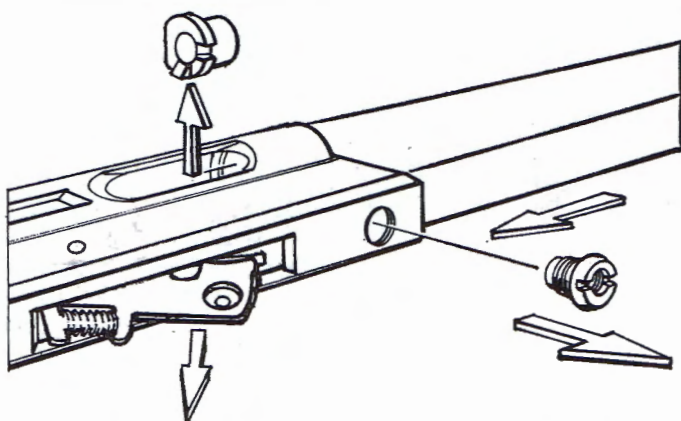
**2** Loosen deflector screw (14), and remove deflector (13). Unscrew receiver plug (32) at rear of receiver (30), and remove plug along with action spring (1), action-spring bushing (2), action-spring guide (3), mainspring (24), and mainspring plunger (25).



**3** Pull bolt handle (6) back until handle aligns with semi-circular cut at rear of handle slot in receiver. Pull handle outward and remove from rifle.

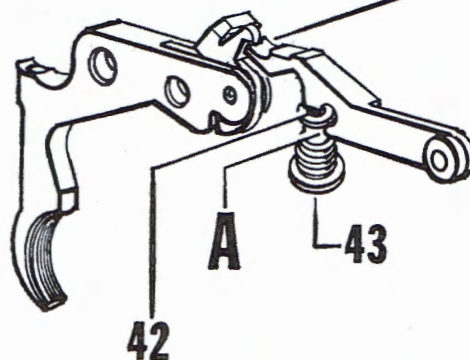


**4** Slide bolt (5) from rear of receiver. Remove firing-pin assembly (18) from bolt. Pull trigger when replacing bolt.



**5** Push cartridge stop (12) and carrier (9) to lower position in receiver. Unscrew takedown-screw bushing (46), and remove from receiver. Then, push loosened receiver-insert assembly (31) and attached outer magazine tube (29) rearward into receiver. Recoiling chamber (36) can then be disassembled from breech end of barrel and removed through ejection port of receiver.

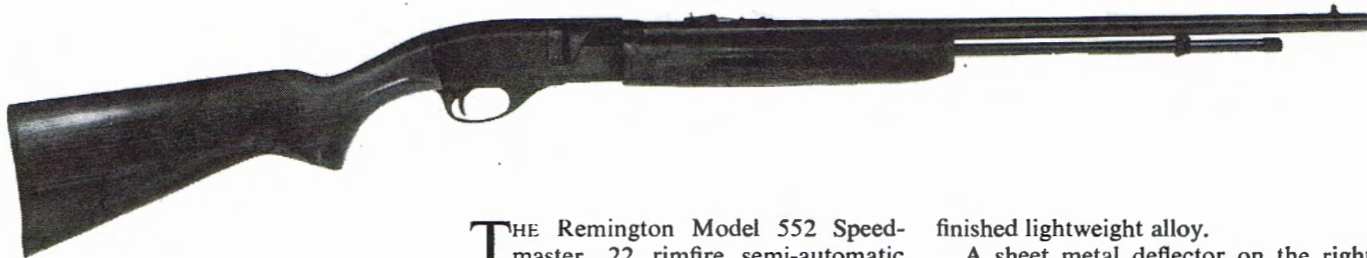
### SEAR-TRIGGER ENGAGEMENT



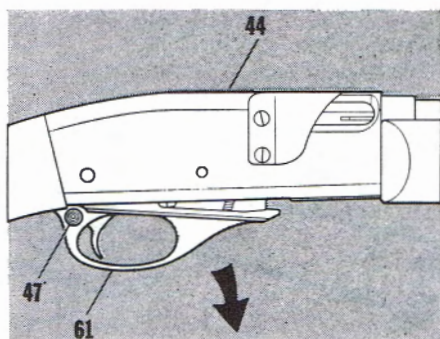
**6** Sear-spring case (43) should not be removed except for replacement of parts. If removed, make sure engagement of sear assembly (40) with trigger assembly (47) is as shown. Also, be sure sear-spring case engages sear notch at "A", and sear spring (42) in case exerts pressure against sear. Do not cross-thread sear-spring case in receiver.



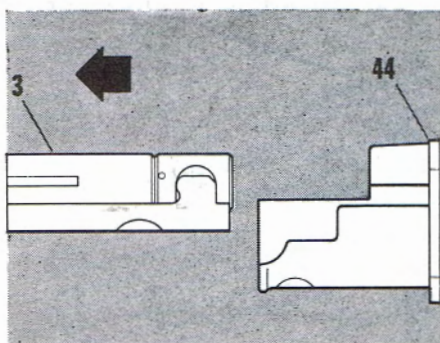
# REMINGTON MODEL 552 RIFLE



Illustrations by FRANK G. HART  
Text by LUDWIG OLSON



**1** Before disassembly, open action and check barrel chamber and magazine to make sure rifle is unloaded. With safety (47) in safe position (red marking on safety will not show), cock action by pulling action bar (1) rearward. Drive out front and rear trigger-plate pins (65) and (66). Grasp trigger plate (61) and pull trigger-plate assembly from receiver (44).



**2** Unlock and remove inner-magazine tube assembly (37). Loosen take-down screw (58), lift rear of fore-end (26) away from barrel (3) slightly, and slide forward to clear front of receiver. Grasp fore-end and barrel firmly, and pull complete bolt, barrel, and fore-end group from receiver.

**T**HE Remington Model 552 Speedmaster .22 rimfire semi-automatic rifle was introduced in 1957. A blow-back-operated autoloader designed for informal target shooting and small-game hunting, it fires .22 short, long, and long rifle regular and high-velocity cartridges interchangeably and without adjustment. The 552 bolt is sufficiently light to permit functioning with low-power cartridges, and a buffer in the rear of the receiver cushions the bolt when high-power rounds are fired. The steel buffer is backed by a large rubber buffer pad.

The Model 552 follows the family of guns concept in which several basic parts of one gun are interchangeable with those of other guns in the same family. This facilitates manufacture, and reduces material and machine requirements.

Made of black-finished lightweight alloy, the receiver is gracefully rounded on the upper rear to give a trim appearance, and has dovetail grooves along its top for a clamp-on telescope sight mount. The trigger plate is also black-

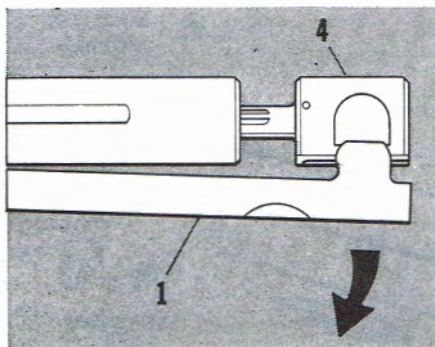
finished lightweight alloy.

A sheet metal deflector on the right of the receiver just behind the ejection port is designed to deflect empty cartridge cases and powder gases away from the shooter. The safety is of cross-bolt type and located in the trigger guard.

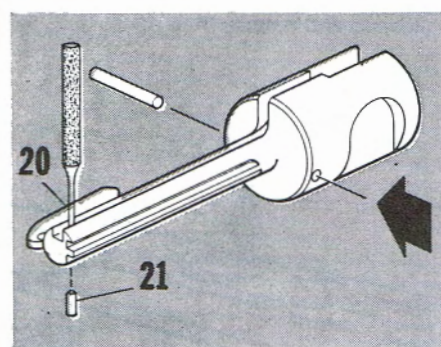
Fitted to the underside of the 23" round tapered barrel is a tubular magazine with capacity of 20 short, 17 long, and 15 long-rifle cartridges. Also fitted to the barrel are a metal bead front sight and U-notch open rear sight adjustable for elevation.

The nicely-shaped walnut stock and fore-end with gloss finish are proportioned for use by adults, and the butt-plate is checkered black plastic.

In addition to standard grade, the Model 52 is produced in Carbine, BDL Deluxe, and Gallery Special versions. The Gallery Special Rifle fires .22 short cartridges only, and the Carbine version has a 21" barrel. Special features of the BDL Deluxe rifle are a checkered grip and fore-end, Du Pont RK-W wood finish, and improved sights. ■



**3** Disengage lug of action-bar assembly from slot in bolt (4). Ease action-bar assembly forward to relieve tension of action spring (2), and remove bolt assembly from barrel. This is sufficient disassembly for normal cleaning.

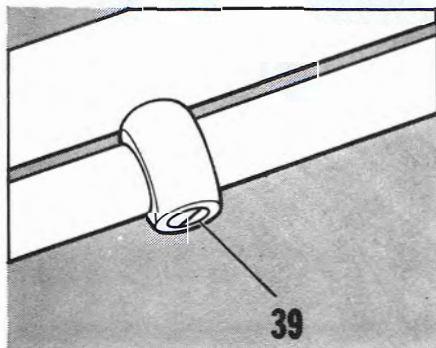
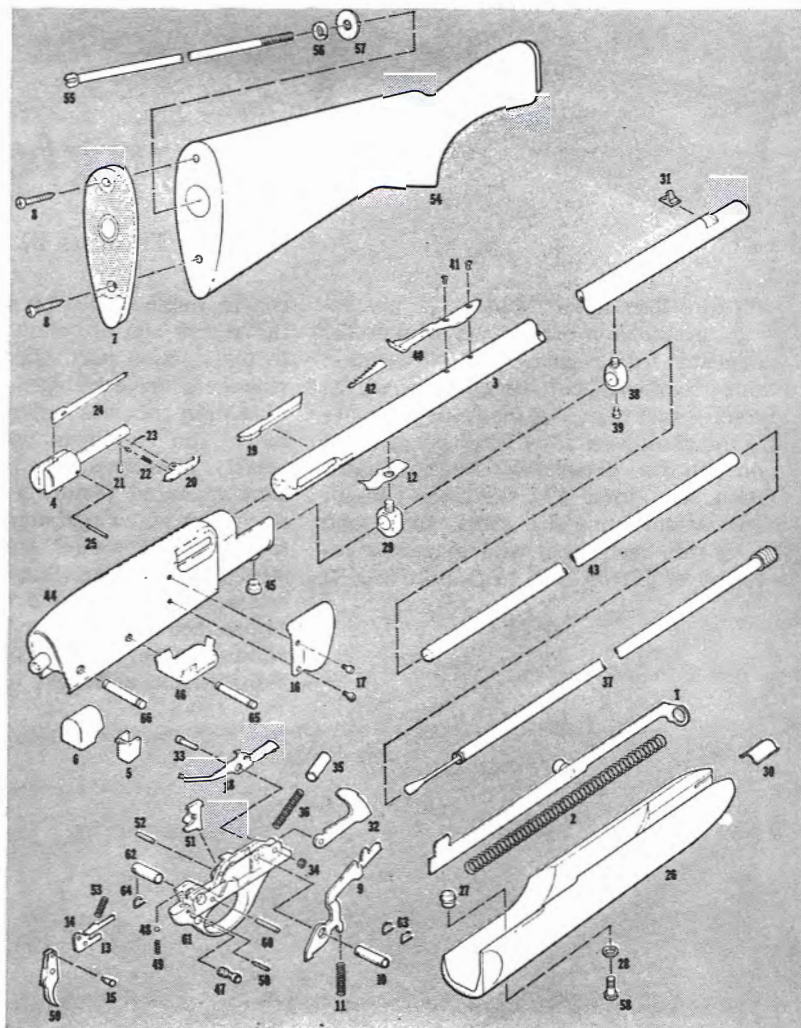


**4** For further disassembly, drive firing-pin retaining pin (25) from left to right out of bolt and remove firing pin (24). Drive extractor pin (21) from bolt, and remove extractor (20), extractor spring (22), and extractor-spring seat (23). Insert small flat tool into ejection slot at breech end of barrel. Push front end of ejector (19) outward, and remove from barrel.

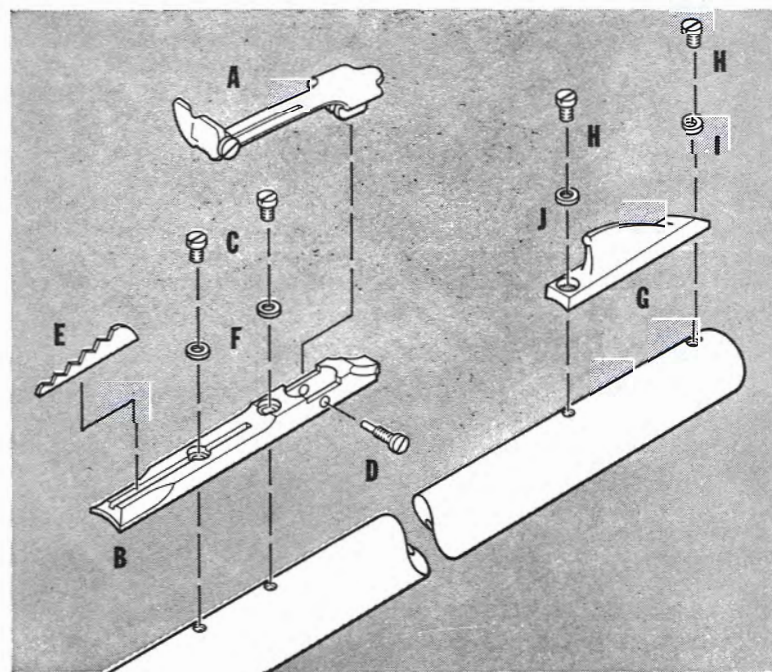


# Parts Legend

1. Action-bar assembly
2. Action spring
3. Barrel
4. Bolt
5. Bolt buffer
6. Buffer pad
7. Buttplate
8. Buttplate screw (2)
9. Carrier
10. Carrier-pivot tube
11. Carrier spring
12. Cartridge ramp
13. Connector, right
14. Connector, left
15. Connector pin
16. Deflector
17. Deflector screw (2)
18. Disconnecter
19. Ejector
20. Extractor
21. Extractor pin
22. Extractor spring
23. Extractor-spring seat
24. Firing pin
25. Firing-pin retaining pin
26. Fore-end
27. Fore-end escutcheon
28. Fore-end escutcheon nut
29. Fore-end hanger
30. Fore-end support
31. Front sight
32. Hammer
33. Hammer pin
34. Hammer-pin washer
35. Hammer plunger
36. Hammer spring
37. Inner-magazine tube assembly
38. Magazine ring
39. Magazine screw
40. Open-sight leaf
41. Open-sight screw (2)
42. Open-sight step
43. Outer-magazine tube
44. Receiver
45. Receiver bushing
46. Receiver cover
47. Safety
48. Safety-detent ball
49. Safety spring
50. Safety-spring retaining pin
51. Sear
52. Sear pin
53. Sear spring
54. Stock
55. Stock bolt
56. Stock-bolt lock washer
57. Stock-bolt washer
58. Takedown screw
59. Trigger
60. Trigger pin
61. Trigger plate
62. Trigger-plate pin bushing, rear
63. Trigger-plate pin detent spring, front (2)
64. Trigger-plate pin detent spring, rear
65. Trigger-plate pin, front
66. Trigger-plate pin, rear



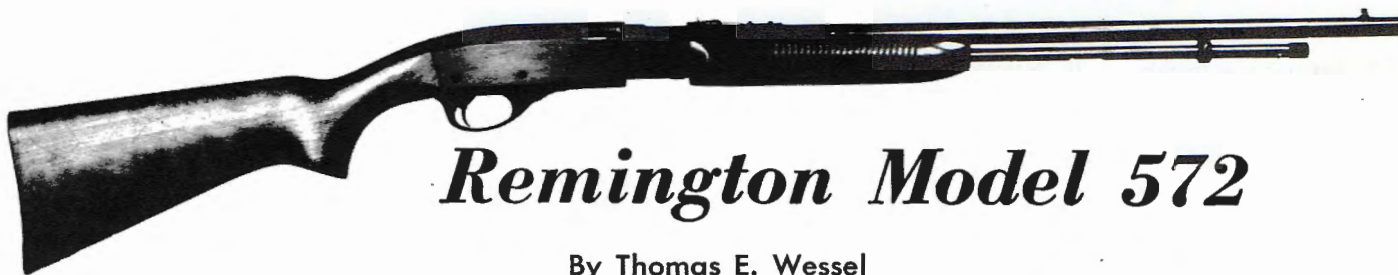
**5** Unscrew magazine screw (39) from magazine ring (38), and remove outer magazine tube (43), fore-end, action-bar assembly, and action spring. Unscrew and remove fore-end hanger (29) and cartridge ramp (12) from barrel. Unscrew and remove buttplate screws (8) and buttplate (7). Reach into hole in rear of stock with a long-bladed screwdriver, and unscrew stock bolt (55). Remove stock bolt, stock-bolt washer (56), and stock (54). Reassemble rifle in reverse. Bent rear tail of disconnecter (18) must be under connector, left (14).



## BDL Grade Sights Parts Legend

- A. Rear-sight assembly
- B. Rear-sight base
- C. Rear-sight base screw (2)
- D. Rear-sight screw
- E. Rear-sight step
- F. Rear-sight washer (2)
- G. Front sight
- H. Front-sight screw (2)
- J. Front-sight washer (2)





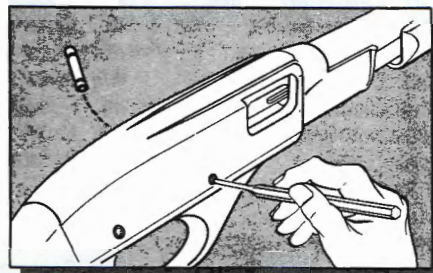
# Remington Model 572

By Thomas E. Wessel

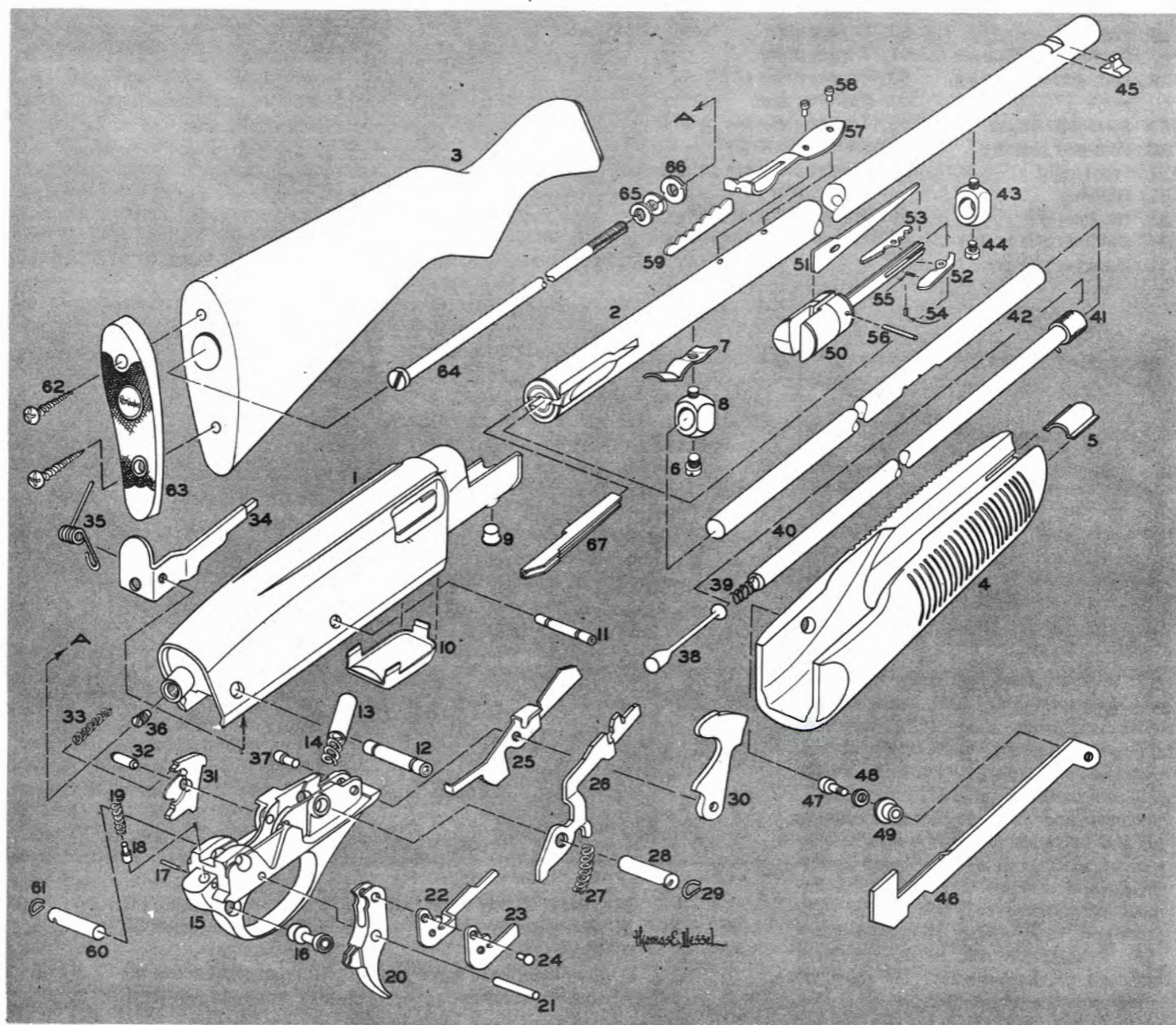
**T**HE Remington Model 572 was introduced in early 1955 to meet the demand for a man-sized slide-action rifle chambered for the economical .22 rimfire cartridge. An interesting feature is the aluminum alloy receiver, grooved on top for detachable scope mounts. Also, the Model 572 functions without adjustment with the short, long, and long rifle cartridges, with magazine capacity of 20, 17, and 15 respectively. It

can be single loaded by merely opening the breech and dropping a cartridge into the ejection port. Closing the action chambers the cartridge.

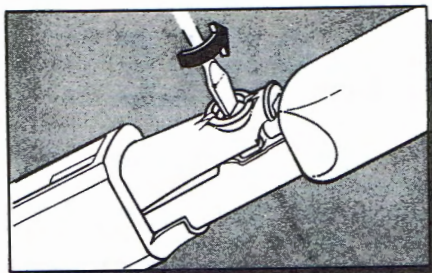
Initially it was offered with steel barrel and American walnut stock assembly. Subsequently a lightweight version appeared featuring a barrel with steel liner and aluminum jacket. Variations of this model are offered with stock of bleached Sun Grain walnut and with receivers and barrels colored bronze-brown, black, or blue, under the catalog names of Buckskin Tan, Crow Wing Black, and Teal Wing Blue.



**1** To disassemble rifle, drift out front and rear trigger plate pins (11 & 12) from either side of receiver (1). Use small punch. These pins are conically counterbored for this purpose. Lift out trigger plate (15) assembly



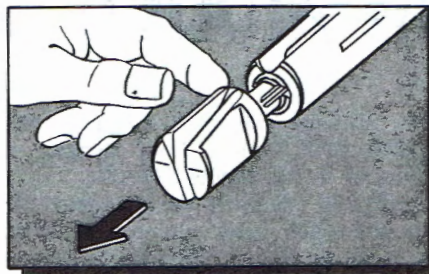




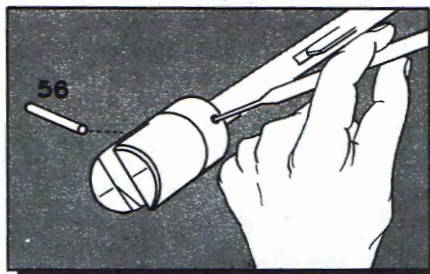
**2** Pull fore-end (4) forward and turn rifle over. Using proper-size screwdriver, carefully remove barrel lock screw (6). Caution: Do not disturb receiver bushing (9) or the manner in which it is staked into receiver. Grasp fore-end assembly and barrel firmly and pull barrel and bolt assembly forward together

#### PARTS LEGEND

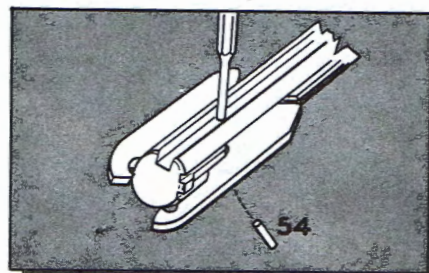
1. Receiver
2. Barrel
3. Stock
4. Fore-end
5. Fore-end support
6. Barrel lock screw
7. Cartridge ramp
8. Fore-end hanger
9. Receiver bushing
10. Receiver cover
11. Trigger plate pin, front
12. Trigger plate pin, rear
13. Hammer plunger
14. Hammer spring
15. Trigger plate
16. Safety
17. Safety spring retaining pin
18. Safety plunger
19. Safety spring
20. Trigger
21. Trigger pin
22. Connector, left
23. Connector, right
24. Connector pin
25. Action bar lock
26. Carrier
27. Carrier spring
28. Carrier pivot tube
29. Trigger plate pin detent spring, front
30. Hammer
31. Sear
32. Sear pin
33. Sear spring
34. Locking bar
35. Locking bar spring
36. Locking bar retaining screw
37. Hammer pin
38. Magazine follower
39. Magazine follower spring
40. Inner magazine tube
41. Magazine plug
42. Outer magazine tube
43. Magazine ring
44. Magazine screw
45. Front sight
46. Action bar
47. Fore-end screw
48. Fore-end nut
49. Fore-end escutcheon
50. Bolt
51. Firing pin
52. Extractor, right
53. Extractor, left
54. Extractor pin
55. Extractor spring
56. Firing pin retaining pin
57. Open sight leaf
58. Rear sight screw (2)
59. Rear sight step
60. Trigger plate pin bushing, rear
61. Trigger plate pin detent spring, rear
62. Buttplate screw (2)
63. Buttplate
64. Stock bolt
65. Stock bolt lock washer (2)
66. Stock bolt washer
67. Ejector



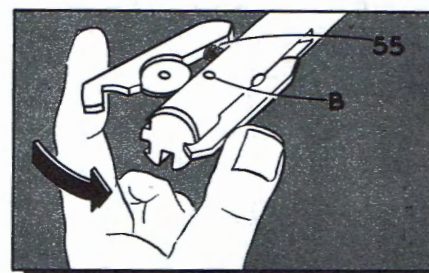
**3** To remove bolt (50) from barrel, lift action bar (46) lug away from bolt and slide bolt from barrel



**4** To remove firing pin (51), drift out firing pin retaining pin (56) with fine flat-nosed punch. Lift firing pin from bolt



**5** To remove extractors (52 & 53), drift out extractor pin (54) with fine punch. Extractors and extractor spring (55) can then be lifted away from bolt



**6** To reassemble extractors, insert right extractor (52) into bolt slot. Caution: Extractors must be reassembled to bolt with firing pin removed. Insert extractor pin (54) into pin hole (B) from bottom side of bolt so that it rests just inside corresponding extractor hole. Replace extractor spring, press in left extractor (53) and reset extractor pin through balance of the bolt

## A MAN TO REMEMBER

### ELIPHALET REMINGTON

*From Blacksmith to  
Riflemaker*

*Born—Oct. 27, 1793*

*Died—Aug. 21, 1861*



**A**LTHOUGH born at Suffield, Conn., most of Remington's life was spent in central New York State, where his parents moved when he was about 6 years old. Here he grew up, helping his father with both the farming and the general blacksmithing and mechanical work which he performed for the community. Like most boys, Remington wanted a rifle of his own, and when he was 16 he decided to test the skill he had acquired as a blacksmith by forging a gun barrel out of scrap iron from the family shop. So well did he perform this task that the gunsmith to whom he took the barrel for finishing encouraged him to go home and make more.

These first barrels were the beginning of Remington's career as a fire-arms manufacturer. His reputation as an excellent workman spread, and orders for his barrels came in continually increasing numbers. Gradually he added equipment, and by 1828 he was making complete guns. By that time also Remington had recognized the advantages of a location on the new Erie Canal which had opened in 1825, and he purchased a tract of land along that waterway. A community known first as Remington's Corners quickly sprang up around his shops, but at his insistence the name was later changed to Ilion. In 1845 he assumed an unfinished government contract for model 1841 rifles, and in 1846-47 purchased the complete gun finishing equipment of Ames & Co. Thereafter he obtained contracts for more rifles, Jenks carbines, and Maynard locks. In 1859 he brought out his revolver which soon won popular approval for its strong frame and simplicity of design. With the coming of the Civil War new and larger contracts for arms and increased demands from individuals brought still greater expansion to the armory, but Remington died before the new shops were completed, and the business passed to his three sons.

—HAROLD L. PETERSON.



# REMINGTON MODEL 580 RIFLE

By FRANK G. HART

IN 1967 Remington Arms Co., Inc., introduced a new "family" of mechanically similar .22 rimfire bolt-action guns. Featuring a noteworthy similarity of major parts, this group of firearms consisted of three rifles and a single-shot smoothbore shotgun. The three rifles were the Model 580 single-shot, the Model 581 with five-shot detachable box magazine, and the Model 582 with underbarrel tubular magazine holding 14 long rifle, 15 long, or 20 short cartridges. Except for its shotgun sights and smoothbore barrel chambered for

the .22 long rifle shot cartridge, the Model 580 Smooth Bore shotgun is identical to the Model 580 rifle.

Rifles in this series were designed for hunting small game and for plinking, whereas the Model 580 Smooth Bore is suitable for shooting small pests and miniature clay targets.

Notably strong, the turn-bolt action used in building this integrated family of guns features a rear locking bolt which has six locking lugs engaging matching lug recesses in the receiver bridge. There are two series of bolt locking lugs with three lugs per series.

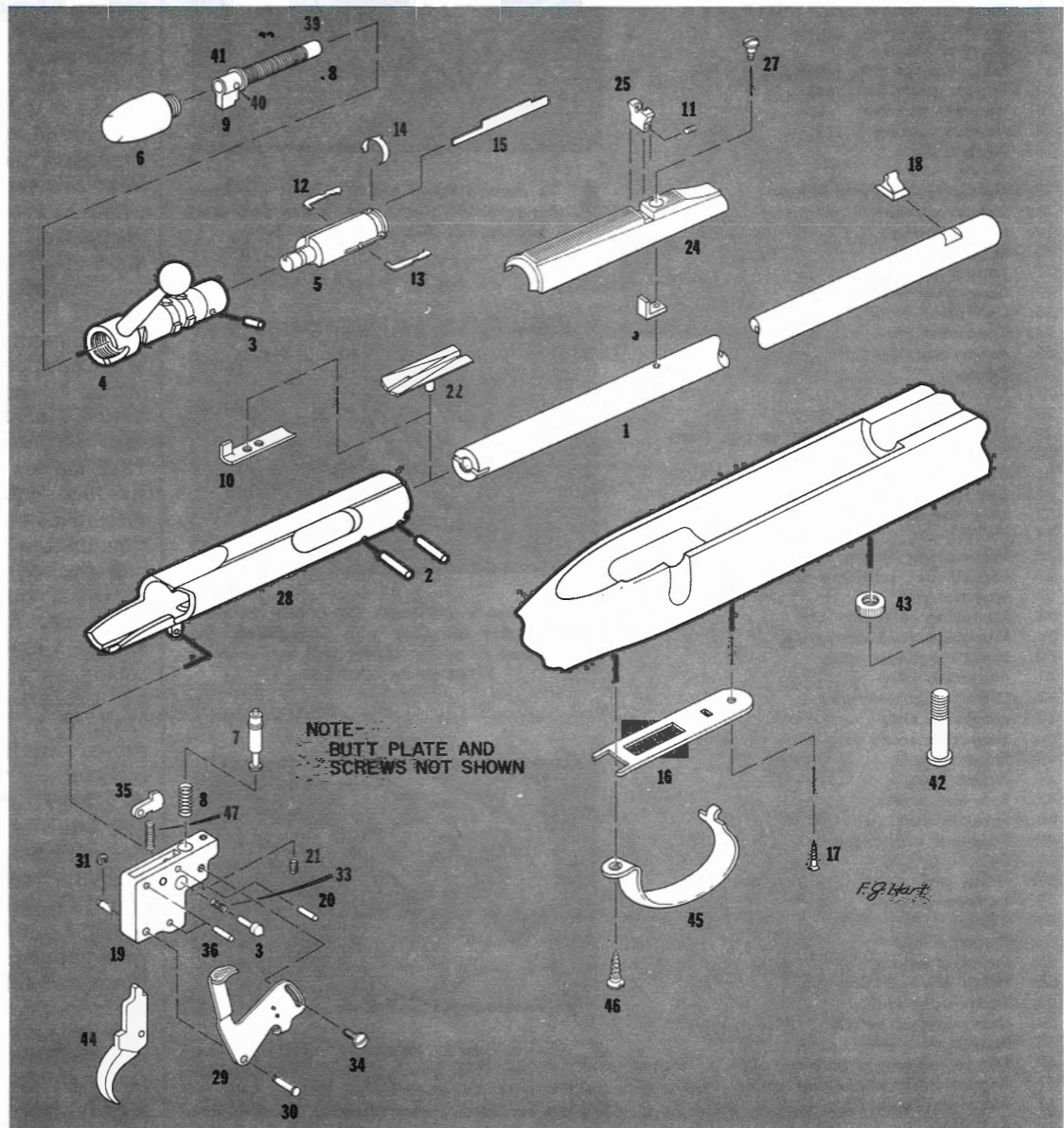
Cocking is done on opening the bolt,

and the bolt head does not rotate. A desirable safety feature is that the bolt face is beveled to permit lateral gas escape through the ejection port should a cartridge case burst. End of the bolt assembly is shrouded with a heavy metal plug, also designed to deflect gas from the shooter's face in the event of a case failure.

Except for their cartridge feed systems, the repeating Models 581 and 582 rifles are mechanically identical to the single-shot Model 580 rifle and shotgun and disassembly and reassembly instructions given here apply to them also. ■

## PARTS LEGEND

1. Barrel
2. Barrel assembly pin (2)
3. Bolt assembly pin
4. Bolt body assembly
5. Bolt head
6. Bolt plug
7. Bolt stop
8. Bolt stop spring
9. Cocking piece
10. Ejector
11. Elevation screw
12. Extractor, left
13. Extractor, right
14. Extractor spring
15. Firing pin
16. Floorplate
17. Floorplate screw
18. Front sight
19. Housing
20. Housing pin
21. Housing lock screw
22. Loading platform
23. Mainspring
24. Rear sight base
25. Rear sight eyepiece
26. Rear sight leaf
27. Rear sight screw
28. Receiver
29. Safety
30. Safety pivot pin
31. Safety pivot pin retaining washer
32. Safety plunger
33. Safety plunger spring
34. Safety retaining screw
35. Sear
36. Sear pin (u.) and Trigger pin (2)
37. Stock
38. Striker assembly
39. Striker
40. Striker cross pin
41. Striker washer
42. Takedown screw
43. Takedown screw escutcheon
44. Trigger
45. Trigger guard
46. Trigger guard screw
47. Trigger spring



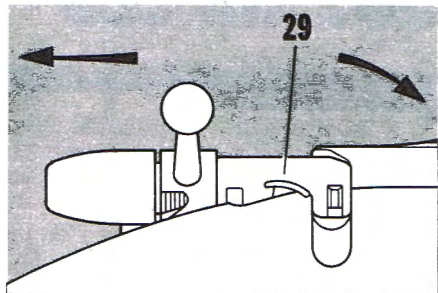
41. Striker washer  
42. Takedown screw

43. Takedown screw  
escutcheon

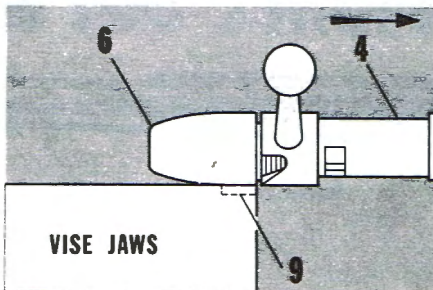
44. Trigger  
45. Trigger guard

46. Trigger guard screw  
47. Trigger spring

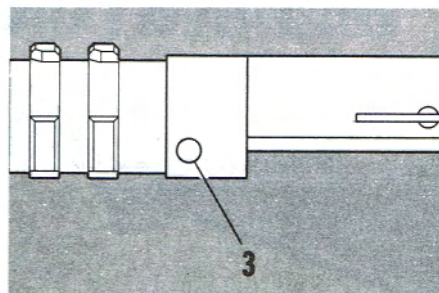




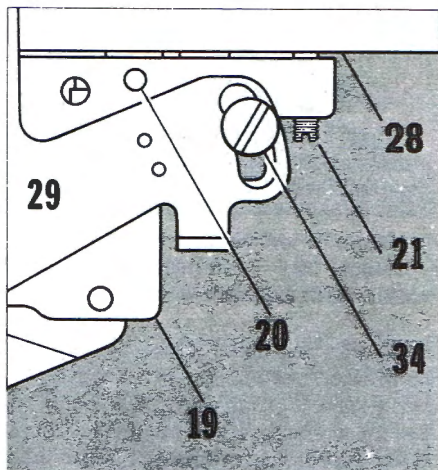
**1** To disassemble, lift bolt handle and pull bolt rearward to bolt stop. Push safety (29) fully forward (past "fire" position) and remove bolt from receiver.



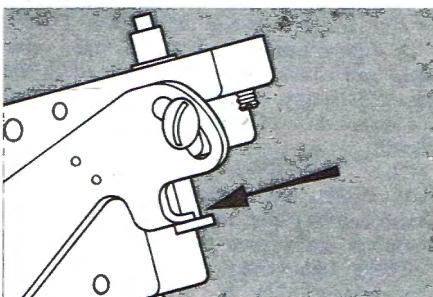
**2** Clamp cocking piece (9) in vise jaws and move bolt assembly (4) forward as far as possible. Unscrew and remove bolt from bolt plug (6) and remove striker assembly (38). Pry ends of extractor spring (14) up and away from bolt head (5). Slide extractors (12 & 13) and firing pin (15) out of bolt head.



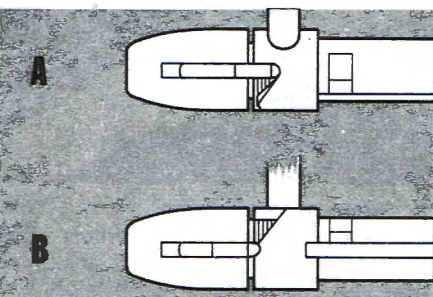
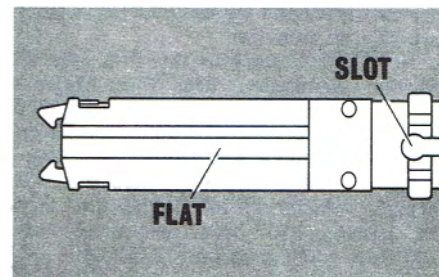
**3** Drive out bolt assembly pin (3) and remove bolt head. Special factory processes are used to make up the striker assembly. Disassembly of this unit is not recommended. Unscrew take-down screw (42) and remove stock assembly (37). Unscrew rear sight screw (27) and remove rear sight assembly from barrel. Remove elevation screw (11) and lift eyepiece (25) from rear sight leaf (26). Remove rear sight leaf from rear sight base (24).



**4** Back off housing lock screw (21) one complete turn. Drive out housing pin (20) and remove entire housing assembly from receiver (28). Lift sear and remove trigger spring (47) from housing (19). Push safety pivot pin retaining washer (31) from end of safety pivot pin and remove pin. Carefully unscrew and remove safety retaining screw (34) and safety (29). Safety plunger (32) is under spring load beneath safety. Care should be taken while removing safety that plunger and spring are not allowed to spring free. Lift safety plunger and safety plunger spring (33) from housing. Bolt stop (7) and bolt stop spring (8) may then be removed. Remaining components comprise the trigger housing sub-assembly. This unit is factory assembled by precision equipment to achieve close tolerances in sear-trigger engagement and to insure proper function of safety. Disassembly of this sub-assembly is seldom necessary and is not recommended.



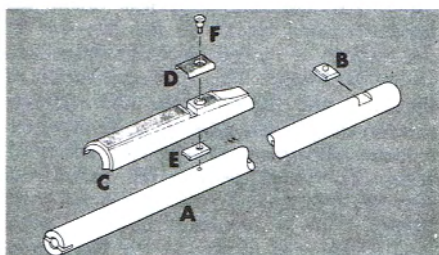
**5** Reassemble in reverse order. Bent tab on bottom of safety must fit over flange on bottom of bolt stop (arrow). Adjust housing lock screw until assembly is snug. Bolt stop must work freely in receiver when activated by safety. Make sure that small tab on top of extractor spring faces forward and into firing pin slot on top of bolt head.



**6** Bolt must be cocked to replace it in receiver. Should bolt become uncocked (A), cocking piece will snap forward into cocking cam at rear of bolt. To cock bolt, clamp cocking piece in vise jaws and rotate bolt handle until cocking piece snaps into small detent on rear edge of bolt (B).

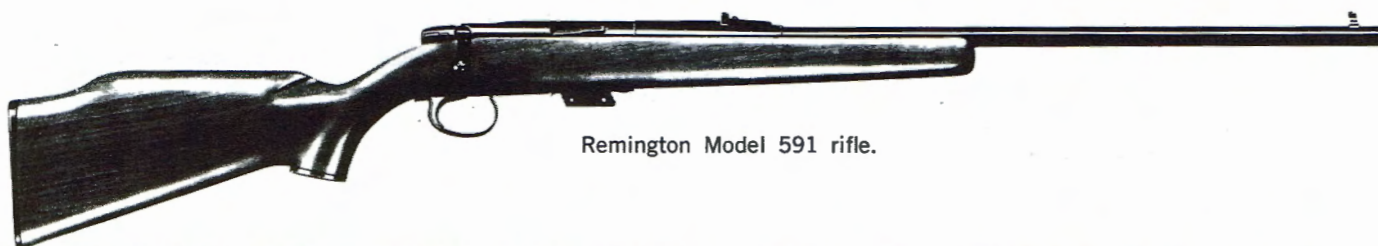
**7** When replacing bolt assembly in receiver, align bolt stop slot on bolt body with rib on bottom of bolt head. While holding safety in full forward position, and with firing pin on top of bolt in 12 o'clock position, insert and push bolt forward into receiver. Release safety and close bolt.

### Parts For 580 Smooth Bore



A. Barrel  
B. Front sight  
C. Rear sight base  
D. Rear sight base cover  
E. Rear sight base locator  
F. Rear sight base screw





Remington Model 591 rifle.

## REMINGTON MODEL 591 & 592 RIFLES



Remington Model 592 rifle.

Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

**I**N 1959, Winchester-Western took a bold step in the rimfire ammunition field by introducing its .22 WMR (Winchester Magnum Rimfire) cartridge. Designed for hunting small game and varmints, this round offered advantages of much higher ballistic performance than other .22 rim-fire cartridges and far less cost than center-fire rifle ammunition.

Remington's entry in this field was the 5 mm. Remington Rim Fire Magnum cartridge, brought on the market in 1970. It features a bottleneck case and a 38-gr., jacketed hollow-point bullet of .2045" diameter, slightly smaller than cal. .22. Muzzle velocity of this round fired in a 24" barrel is 2100 f.p.s. (feet per second), 100 f.p.s. faster than the .22 WMR.

Introduced with the 5 mm. cartridge were two new Remington bolt-action repeating rifles chambered for it, the Model 591 with detachable, four-round box magazine, and the Model 592 featuring a 10-round, tubular magazine under the barrel. These rifles are generally alike except for their feed systems.

An outstanding feature of these rifles is the unusual extractor and ejector system. The long springy extractor has a forward projecting hook which rests on a barrel ramp. As the bolt is turned open, the spring-actuated ejector in the left side of the receiver is moved rearward by a latch on the bolt head. This starts extraction of the case, and the extractor then engages the rim to complete extraction. Primary extraction with this system is very powerful. Also, this design permits the barrel and bolt head to enclose the case head completely. This is important since a rimfire case is not very strong in the head area, and the cartridge develops high pressure.

The bolt mechanism has a separate, non-rotary bolt head and six locking lugs on the bolt body. Other principal features of the action are a speed-lock firing mech-

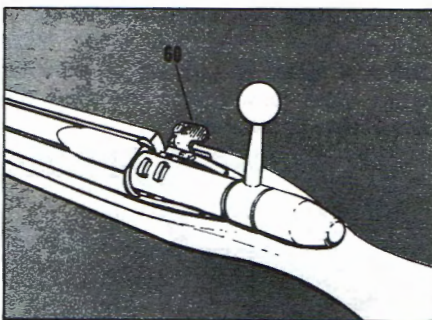
anism with extremely fast lock time, and a single-stage trigger. On the right side of the action behind the bolt handle is a thumb-operated safety. When the safety is pushed all the way forward, it depresses the bolt stop to permit removal of the bolt.

Both rifles have 24" round barrels. The six-groove rifling has a twist of one turn in 12", and the groove diameter is .2045".

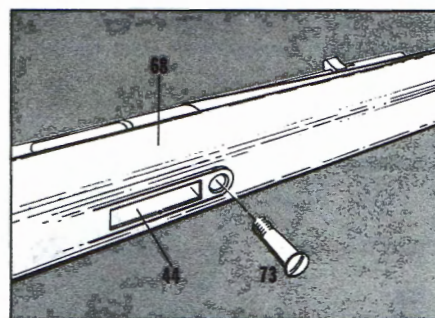
A fully-adjustable, U-notch open rear sight and bead front sight are fitted to the barrel. The top of the receiver is grooved for installation of clamp-on telescope sight mounts.

The walnut-finish hardwood stock of both models has a pistol grip and Monte Carlo comb. Fitted to it are a black plastic buttplate and brown plastic grip cap.

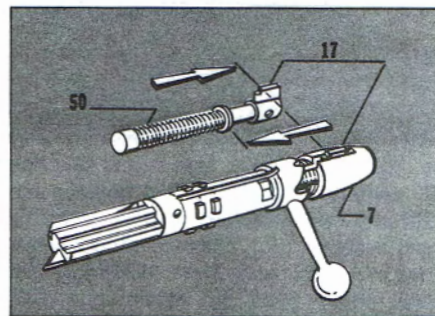
These lightweight repeating rifles and the cartridge they fire are well suited for hunting small game and varmints. The rifles were discontinued in 1973, but the cartridge is still in the Remington line.



**1** Prior to disassembly, unload rifle. Remove magazine assembly (38) from Model 591, and inner magazine tube (36) from Model 592. Tilt muzzle of Model 592 downward to unload tubular magazine. Replace inner magazine tube, and open and close action several times to remove any cartridges remaining in rifle. Then, remove inner magazine tube. Open bolt, and pull rearward to bolt stop (8). Push safety (60) completely forward, and remove bolt assembly from rifle.

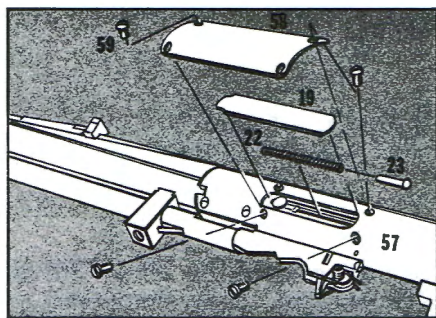


**2** Unscrew takedown screw (73 for Model 591; 72 for Model 592), and remove stock (68) from barrel and action.

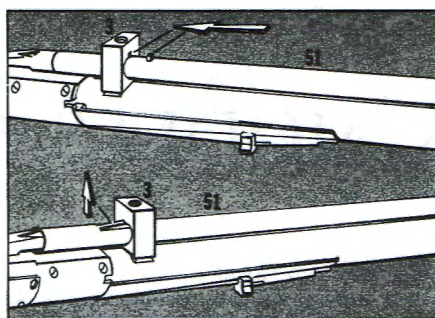


**3** Use a drift punch and hammer to drive out bolt assembly pin (4), and separate bolt head (6) from bolt body assembly (5). Clamp a 1/4" drift punch in a vise so that end of punch projects 1 1/2" beyond vise jaws. Position front of striker (69) against punch, and push bolt body toward vise to move cocking piece (17) out of engagement with notch in bolt body. Then, unscrew and remove bolt plug (7) and striker assembly as a unit. While holding striker in a padded vise, drive out striker cross pin (70) with a punch, and remove cocking piece, striker washer (71), and mainspring (50). Take care in doing this since cocking piece is under heavy spring pressure.

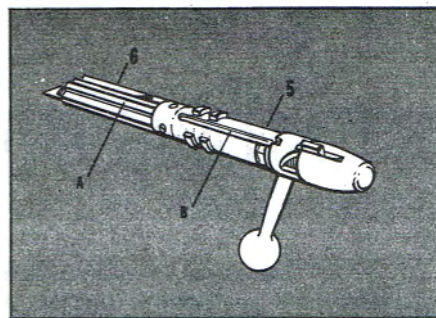




**4** Unscrew four receiver cover screws (59), and remove receiver cover (58) from left side of receiver assembly (57). Pry out ejector cover (19), and remove ejector spring (22) and ejector spring guide (23). Reassemble in reverse.



**5** During reassembly of Model 592, small stud on outer magazine tube (51) must engage with groove in barrel bracket (3). Bend small tongue on tube so that it engages against rear of bracket and prevents tube from moving forward.

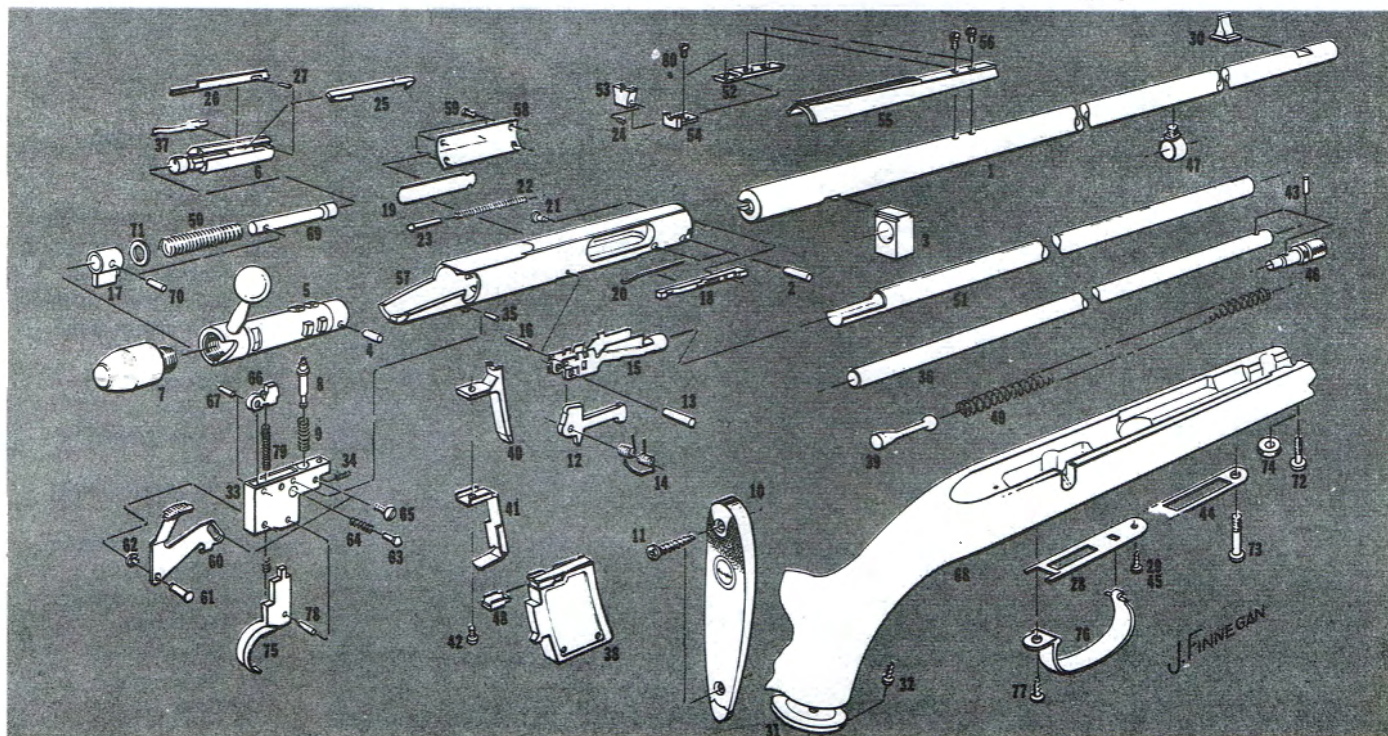


**6** Firing pin must be cocked when replacing bolt in receiver. Align rib (A) on bottom of bolt head with groove (B) on bolt body assembly. Start bolt assembly in receiver with handle at two o'clock position, press safety forward all the way, and push bolt forward.

## PARTS LEGEND

- |                                     |                               |                                       |                                     |
|-------------------------------------|-------------------------------|---------------------------------------|-------------------------------------|
| 1. Barrel (592)                     | 21. Ejector rivet             | 42. Magazine latch screw (591)        | 63. Safety plunger                  |
| 2. Barrel assembly pin (2)          | 22. Ejector spring            | 43. Magazine pin (592)                | 64. Safety plunger spring           |
| 3. Barrel bracket (592)             | 23. Ejector spring guide      | 44. Magazine plate (591)              | 65. Safety retaining screw          |
| 4. Bolt assembly pin                | 24. Elevation screw           | 45. Magazine plate screw (591)        | 66. Sear                            |
| 5. Bolt body assembly               | 25. Extractor                 | 46. Magazine plug (592)               | 67. Sear pin                        |
| 6. Bolt head                        | 26. Firing pin                | 47. Magazine ring (592)               | 68. Stock                           |
| 7. Bolt plug                        | 27. Firing pin retaining pin  | 48. Magazine shoe (591)               | 69. Striker                         |
| 8. Bolt stop                        | 28. Floor plate (592)         | 49. Magazine spring (592)             | 70. Striker cross pin               |
| 9. Bolt stop spring                 | 29. Floor plate screw (592)   | 50. Mainspring                        | 71. Striker washer                  |
| 10. Buttplate                       | 30. Front sight               | 51. Outer magazine tube (592)         | 72. Takedown screw (592)            |
| 11. Buttplate screw (2)             | 31. Grip cap                  | 52. Rear sight base                   | 73. Takedown screw (591)            |
| 12. Carrier (592)                   | 32. Grip cap screw            | 53. Rear sight eyepiece               | 74. Takedown screw escutcheon (591) |
| 13. Carrier pin (592)               | 33. Housing                   | 54. Rear sight leaf                   | 75. Trigger                         |
| 14. Carrier spring (592)            | 34. Housing lock screw        | 55. Rear sight rib                    | 76. Trigger guard                   |
| 15. Cartridge feed insert (592)     | 35. Housing pin               | 56. Rear sight screw (2)              | 77. Trigger guard screw             |
| 16. Cartridge feed insert pin (592) | 36. Inner magazine tube (592) | 57. Receiver assembly                 | 78. Trigger pin                     |
| 17. Cocking piece                   | 37. Latch                     | 58. Receiver cover                    | 79. Trigger spring                  |
| 18. Ejector                         | 38. Magazine assembly (591)   | 59. Receiver cover screw (4)          | 80. Windage screw                   |
| 19. Ejector cover                   | 39. Magazine follower (592)   | 60. Safety                            |                                     |
| 20. Ejector release                 | 40. Magazine guide (591)      | 61. Safety pivot pin                  |                                     |
|                                     | 41. Magazine latch (591)      | 62. Safety pivot pin retaining washer |                                     |

**NOTE:** Model number following name of part indicates part is for that model only. Parts 29 and 45 are alike except in name.





# REMINGTON MODELS 600 & 660

By FRANK G. HART

**I**N 1964, Remington introduced their Model 600 bolt-action carbine, a handy lightweight center-fire arm well adapted for carrying in a saddle scabbard. Its simple strong action is characterized by dual front locking lugs, stock-hugging bolt handle, box magazine, and a thumb-operated safety. Other outstanding features are an 18½" barrel fitted with a ventilated rib and open sights, and a walnut stock with long fore-end and Monte Carlo comb. Weight unloaded is approximately six lbs. It was offered in .308 Winchester, .35 Remington, .222 Remington, 6 mm. Remington, and .243 Winchester chamberings, which afforded an excellent selection for both

big game and varmint hunters.

A version of this carbine designated Model 600 Magnum was introduced in 1965. Chambered for the .350 Remington Magnum cartridge, this arm is sufficiently powerful for taking the largest North American big game. It features a laminated walnut and beech stock with Du Pont RK-W finish, rubber recoil pad, leather sling strap, and quick-detachable swivels. An upward extension of the barrel bracket provides support for a telescope sight mount. In 1966, this model was made available in an additional chambering, the 6.5 mm. Remington Magnum.

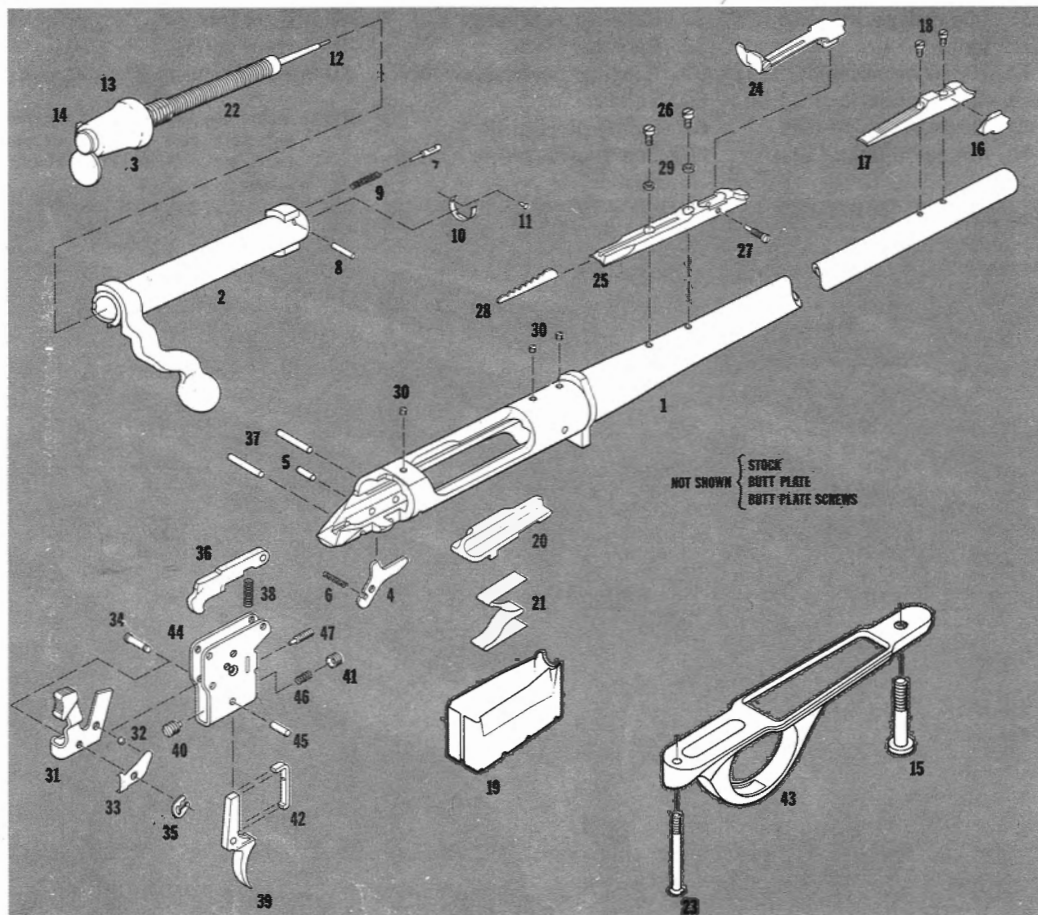
Remington brought out the Model 660 and Model 660 Magnum carbines

in 1968 to replace the Models 600 and 600 Magnum. These new models are mechanically the same as the carbines they replaced, and are offered in the same calibers except that the .35 Remington chambering was dropped. New features of the 660 models are a long bolt sleeve to help keep out dirt and water, 20" barrel without rib, improved open sights, and a black nylon fore-end tip and grip cap set off by white-line spacers. RK-W stock finish is standard on both regular and Magnum versions as is an upward extension on the barrel bracket to help support a telescope sight mount.

Takedown instructions for the Model 660 also serve for the Model 600.

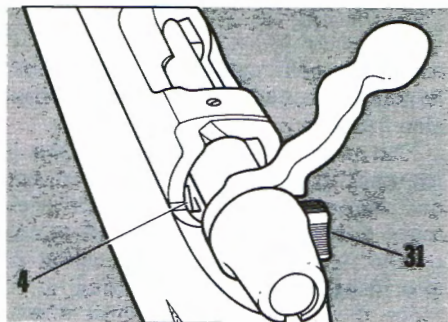
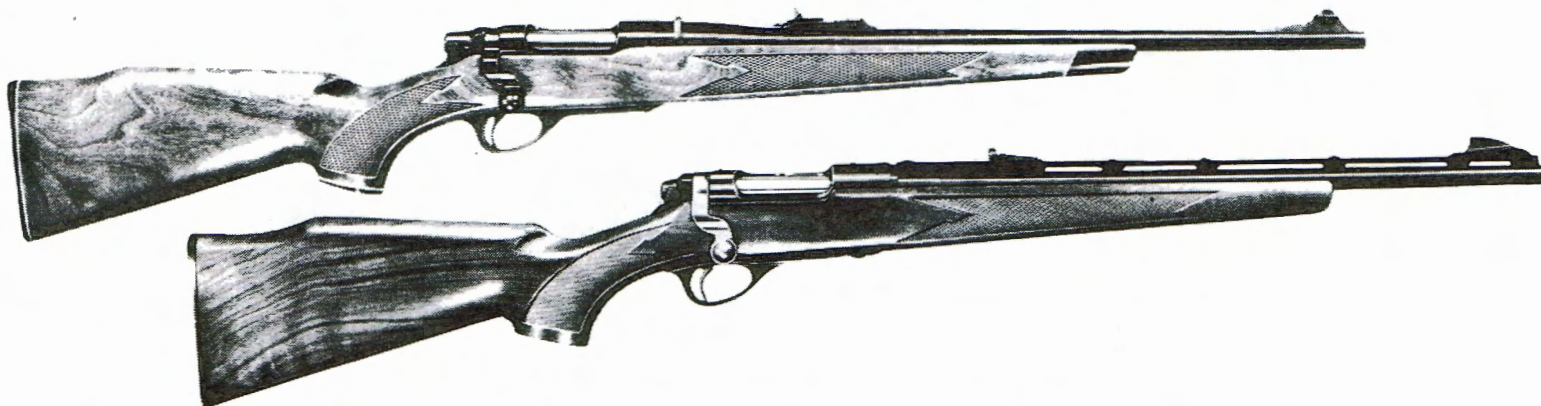
## Parts Legend

- |                                 |                     |                     |                         |
|---------------------------------|---------------------|---------------------|-------------------------|
| 1. Barrel and receiver assembly | 4. Bolt stop        | 8. Ejector pin      | 12. Firing pin          |
| 2. Bolt                         | 5. Bolt stop pin    | 9. Ejector spring   | 13. Firing pin assembly |
| 3. Bolt plug                    | 6. Bolt stop spring | 10. Extractor       | 14. Firing pin head     |
|                                 | 7. Ejector          | 11. Extractor rivet | 15. Front guard screw   |

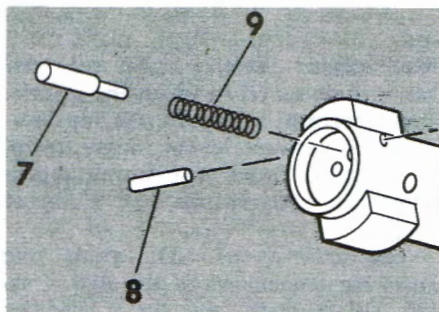


- |                                    |
|------------------------------------|
| 16. Front sight                    |
| 17. Front sight ramp               |
| 18. Front sight ramp screw (2)     |
| 19. Magazine                       |
| 20. Magazine follower              |
| 21. Magazine spring                |
| 22. Mainspring                     |
| 23. Rear guard screw               |
| 24. Rear sight assembly            |
| 25. Rear sight base                |
| 26. Rear sight base screw (2)      |
| 27. Rear sight screw               |
| 28. Rear sight step                |
| 29. Rear sight washer (2)          |
| 30. Receiver plug screw (5)        |
| 31. Safety                         |
| 32. Safety detent ball             |
| 33. Safety detent spring           |
| 34. Safety pivot pin               |
| 35. Safety snap washer             |
| 36. Sear safety cam                |
| 37. Sear pin (2)                   |
| 38. Sear spring                    |
| 39. Trigger                        |
| 40. Trigger adjusting screw        |
| 41. Trigger adjusting screw, front |
| 42. Trigger connector              |
| 43. Trigger guard                  |
| 44. Trigger housing                |
| 45. Trigger pin                    |
| 46. Trigger spring                 |
| 47. Trigger stop screw             |

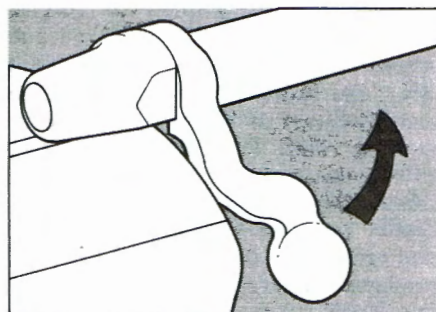




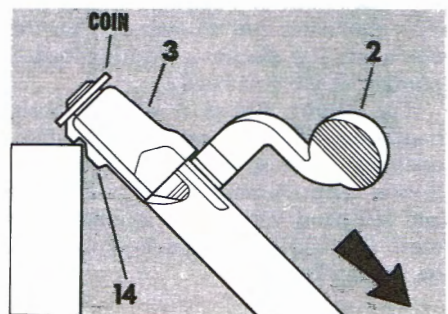
**1** To disassemble, unlock bolt by pushing safety (31) forward to FIRE position. Raise bolt handle and pull bolt rearward. Check to see that chamber and magazine are unloaded. Using a small, flat key or screwdriver, press down on front of bolt stop (4) located in left rear of bolt channel in receiver. Withdraw bolt from receiver.



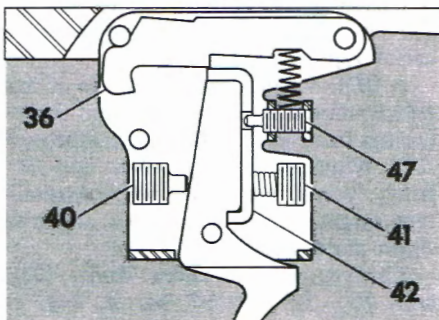
**3** Drive out ejector pin (8) and remove ejector (7) and ejector spring (9) from bolt head. Do not attempt removal of extractor. Unscrew front and rear guard screws (15) & (23) and remove trigger guard (43) and stock. Action of Magnum model may require more effort to disassemble due to custom bedding in stock. Removal of stock and trigger guard is necessary only for replacement of parts or adjustment of trigger mechanism.



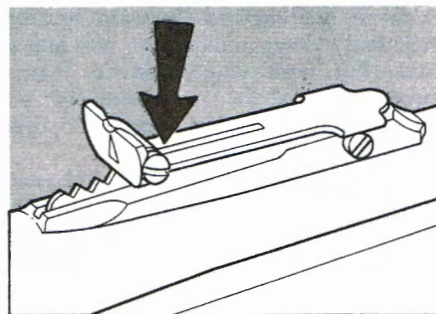
**5** Reassemble rifle in reverse. Firing pin must be cocked before replacing bolt in rifle. If firing pin becomes uncocked, firing pin head will be deep inside bolt plug. To cock firing pin, clamp firing pin head in vise jaws and raise bolt handle until firing pin head snaps into small cocking notch on rear of bolt.



**2** Clamp firing pin head (14) securely in vise jaws and move bolt (2) until coin or washer can be inserted into small slot in rear of firing pin head, (Model 660) or between firing pin head and bolt plug (3) in Model 600. Bolt can also be moved after hooking notch on bottom of firing pin head over a sharp corner. Unscrew and remove firing pin assembly (13) from bolt. Coin or washer must remain in slot or between firing pin head and bolt plug at all times when firing pin assembly is removed from bolt. Should coin become dislodged, difficulty will be experienced in replacing firing pin assembly. Further take down of firing pin assembly is not recommended and should be attempted only if necessary by a qualified gunsmith.



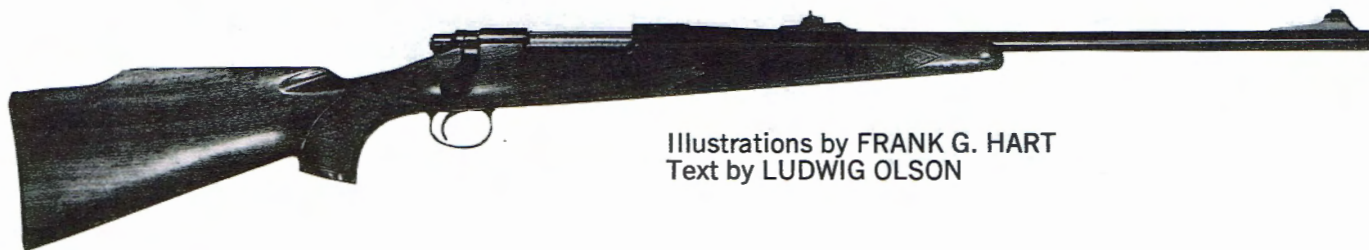
**4** Trigger pull may be adjusted to desired weight by turning front trigger adjusting screw (41) clockwise to make pull heavier or counter-clockwise for a lighter pull. Do not adjust rear trigger adjusting screw (40). It is properly adjusted and sealed at the factory to provide correct engagement of trigger connector (42) and sear safety cam (36). To reduce trigger travel, place bolt in receiver and cock action. Turn trigger stop screw (47) clockwise until firing pin will not fall when trigger is pulled. Re-cock action and back off stop screw until firing pin falls. Adjusting in this manner will give minimum trigger overtravel.



**6** To adjust windage, turn windage screw (arrow). Turn screw clockwise to move rear sight eyepiece to left, and counter-clockwise to move eyepiece to right.



# REMINGTON MODEL 700 RIFLE



Illustrations by FRANK G. HART  
Text by LUDWIG OLSON

**R**EMINGTON Arms Co., Inc., is among the world's foremost designers and producers of bolt-action center-fire sporting rifles. The earliest Remington rifle of this type was introduced during the late 1800's, but the first really successful one was the Model 30 which was brought on the market in 1921 and produced in several versions. In 1941, the Model 30 series rifles were superseded by the Model 720 which was short lived because of World War II.

The first Remington bolt-action center-fire rifle after the war was the Model 721, followed shortly by a short-action companion, the Model 722. These highly successful rifles were introduced in 1948. Like the Models 30 and 720, they had several basic Mauser features such as dual-opposed forward locking lugs and a staggered-column box magazine, but were engineered for easier production. A deluxe version of the Model 721, designated Model 725, was brought on the market in 1958.

In 1962, the Models 721, 722, and 725 were replaced by the Remington Model 700 rifle which is essentially an improved version of the Models 721 and 722. An improved Model 700 was introduced in 1974.

The Model 700 is offered in a wide range of popular chamberings from .17 Remington through .458 Winchester Magnum. It is produced in two action lengths, right- and left-hand versions, and several grades. The short-action version is of proper length for short and medium cartridges from the .17 Remington through .308 Winchester, while the version with a longer action is adapted to cartridges of .30-'06 length and slightly longer.

Two basic grades of this rifle are the ADL Deluxe and BDL Custom Deluxe. Both feature a one-piece American walnut stock with pistol grip, cheekpiece, Monte Carlo comb, checkering on the grip and fore-end, and RK-W gloss finish. The BDL Custom Deluxe grade rifle has cut checkering rather than impressed type of the ADL grade, and a

black plastic buttplate, grip cap, and fore-end tip set off by white-line spacers. It also features a hinged magazine floorplate with release in the trigger guard, a detachable front sight cover, quick-detachable sling swivels, and a leather sling.

The lower-priced ADL grade rifle lacks the refinements of the BDL Custom Deluxe grade, and has a blind-box magazine. There is no floorplate, and the magazine spring bears against the wood floor of the mortise in the stock. Three guard screws are provided. The front one is inserted through a metal bushing inletted in the stock, and the others extend through holes in the trigger guard.

Model 700 rifles in these two grades have a 22" or 24" barrel, depending on caliber, and are fitted with a ramp-mounted gold bead front sight and fully-adjustable open rear sight. The receiver is drilled and tapped for top telescope sight mounts as well as an aperture receiver sight.

A BDL Varmint Special grade of this rifle is offered in popular varmint chamberings from .22-250 Remington through .243 Winchester. Its receiver and 24" heavy barrel are fitted with dovetail-type target scope mount bases, and iron sights are not provided.

There is also a Custom Model 700C with 20", 22", or 24" barrel, with or without hinged magazine floorplate, and various other options. The selected American walnut stock of this grade is hand checkered, and the rifle is available on special order only.

All grades of the Model 700 feature an exceptionally smooth-working action. The bolt head is counterbored deeply to enclose the rear of the cartridge, and the cylindrical front end of the bolt fits a ring-shaped recess in the barrel closely. This construction in conjunction with dual-opposed front locking lugs and properly heat-treated alloy steel gives great strength.

Action improvements in the 1974 version are an anti-bind feature to give

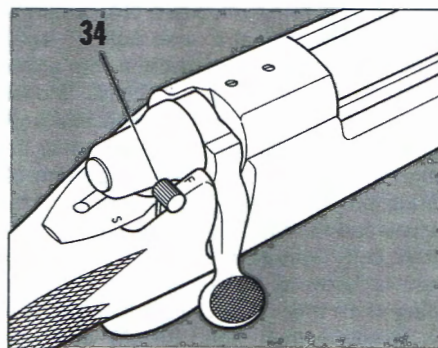
smoother bolt operation, better bolt handle shape, and a stainless steel magazine follower.

The swept-back bolt handle of pleasing appearance is close to the trigger and shaped to clear a low-mounted telescope sight. The thumb-operated safety on the right rear side of the action is also designed for low mounting of a scope. Firing pin travel is short which gives fast lock time.

Of single-stage design, the trigger mechanism is adjustable for weight of pull and overtravel. Screws for making the adjustments are accessible after removing the stock.

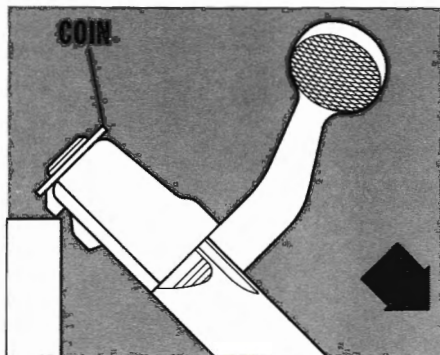
Cartridge feed from the staggered-column box magazine is smooth and reliable. Unlike many bolt-action rifles, the extractor is horseshoe shaped and contained in the counterbored bolt head. This eliminates any receiver cuts for the extractor. The ejector is a spring-loaded plunger in the bolt head.

The Model 700 is a well-balanced, handsome rifle with excellent handling qualities. Because of its availability in a wide range of calibers and both right- and left-hand versions, it is among the most versatile bolt-action hunting rifles on the market.

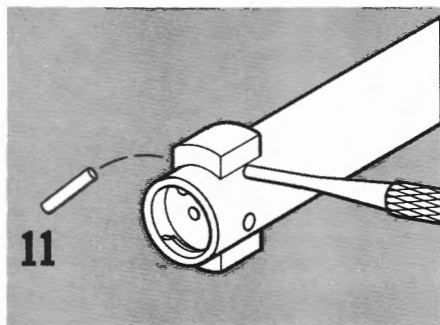


**1** Before disassembly, check rifle to be sure that it is unloaded. Push safety (34) forward to fire position, unlock bolt (2), and pull it rearward to bolt stop (4). Press bolt stop release (6) upward, and withdraw bolt assembly from rifle.

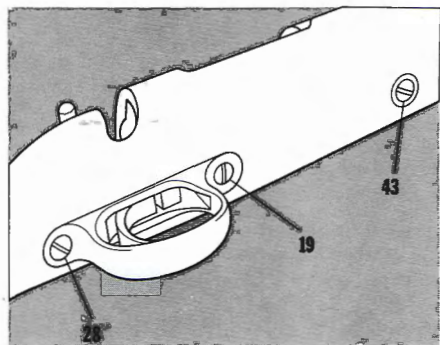




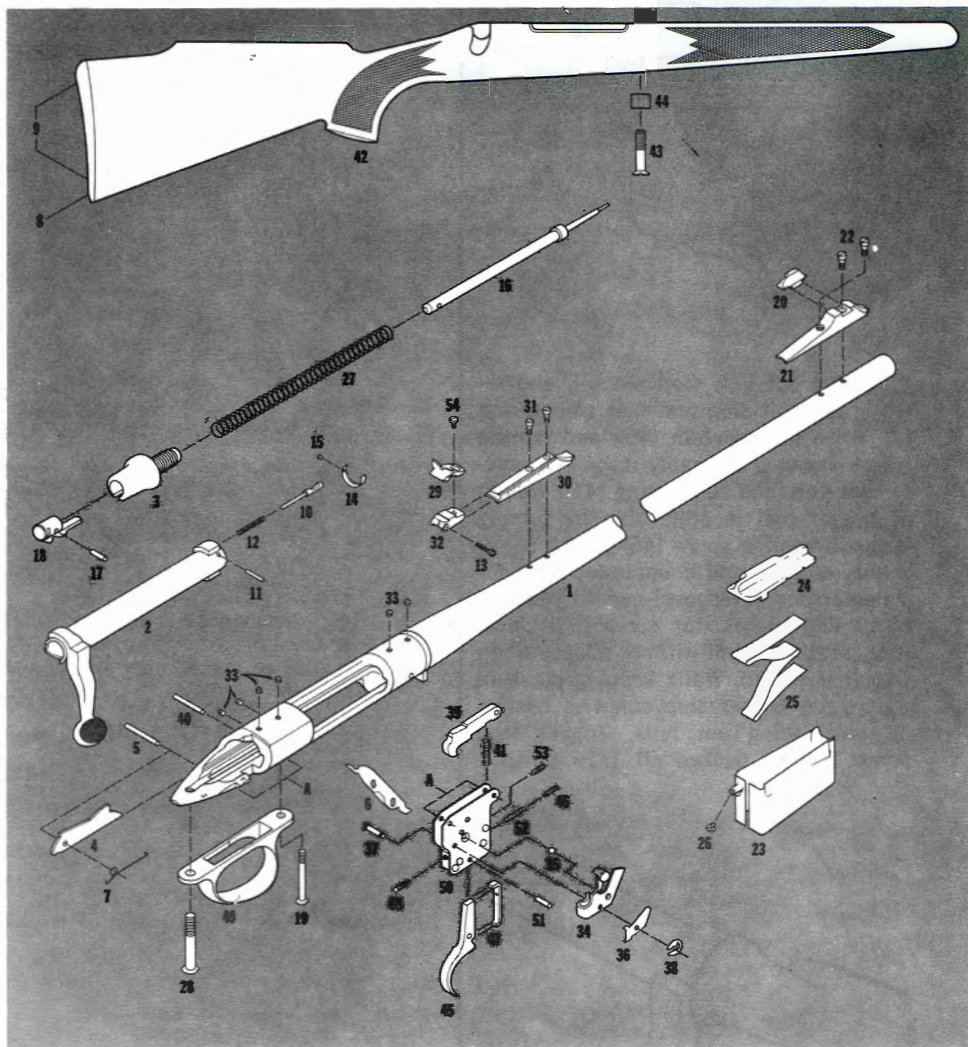
**2** Hook firing pin head (18) on sharp corner of bench (or clamp in vise jaws), and pull bolt in direction shown until coin can be inserted in small slot on firing pin head. In earlier design where slot in firing pin head was omitted, coin may be inserted in space between bolt plug (3) and firing pin head. Hold bolt handle, and unscrew bolt plug to remove firing pin assembly from bolt. Place a metal sleeve ( $\frac{3}{8}$ " diameter,  $\frac{7}{8}$ " long, with  $\frac{3}{16}$ " hole through it lengthwise) over front of firing pin, and screw bolt plug back into bolt until coin is released. Drive out firing pin cross pin (17) with close-fitting drift punch, and remove firing pin head. Unscrew bolt plug carefully as it is under force of mainspring (27). Remove bolt plug and mainspring from firing pin.



**3** Drive out ejector pin (11), and remove ejector (10) and ejector spring (12) from front of bolt.



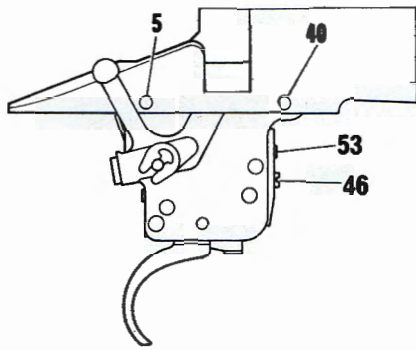
**4** Unscrew takedown screw (43), and front and rear guard screws (19) and (28). Remove trigger guard (49), stock (42), magazine (23), magazine spring (25), and follower (24).



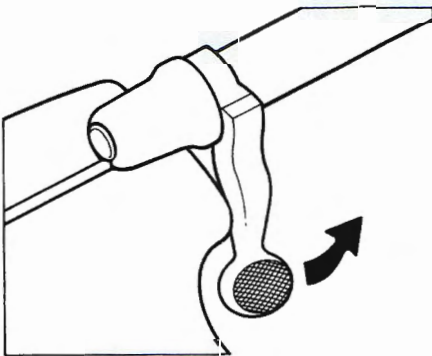
#### Parts Legend

- |                                 |                               |
|---------------------------------|-------------------------------|
| 1. Barrel and receiver assembly | 28. Rear guard screw          |
| 2. Bolt assembly                | 29. Rear sight eyepiece       |
| 3. Bolt plug                    | 30. Rear sight base           |
| 4. Bolt stop                    | 31. Rear sight base screw (2) |
| 5. Bolt stop pin                | 32. Rear sight slide          |
| 6. Bolt stop release            | 33. Receiver plug screw (6)   |
| 7. Bolt stop spring             | 34. Safety                    |
| 8. Buttplate                    | 35. Safety detent ball        |
| 9. Buttplate screw (2)          | 36. Safety detent spring      |
| 10. Ejector                     | 37. Safety pivot pin          |
| 11. Ejector pin                 | 38. Safety snap washer        |
| 12. Ejector spring              | 39. Sear safety cam           |
| 13. Elevation screw             | 40. Sear pin                  |
| 14. Extractor                   | 41. Sear spring               |
| 15. Extractor rivet             | 42. Stock                     |
| 16. Firing pin                  | 43. Takedown screw            |
| 17. Firing pin cross pin        | 44. Takedown screw bushing    |
| 18. Firing pin head             | 45. Trigger                   |
| 19. Front guard screw           | 46. Trigger adjusting screw   |
| 20. Front sight                 | 47. Trigger connector         |
| 21. Front sight ramp            | 48. Trigger engagement screw  |
| 22. Front sight ramp screw (2)  | 49. Trigger guard             |
| 23. Magazine                    | 50. Trigger housing           |
| 24. Magazine follower           | 51. Trigger pin               |
| 25. Magazine spring             | 52. Trigger spring            |
| 26. Magazine tab screw          | 53. Trigger stop screw        |
| 27. Mainspring                  | 54. Windage screw             |





**5** Drive out bolt stop pin (5), and remove bolt stop and bolt stop spring (7). Drive out sear pin (40), and remove trigger housing assembly unit, sear safety cam (39), and sear spring (41). Weight of trigger pull is adjustable by turning trigger adjusting screw (46) clockwise for a heavier pull, and counterclockwise for a lighter one. Overtravel can be reduced by turning trigger stop screw (53) clockwise until firing pin will not release when trigger is pulled. While keeping pressure on trigger, trigger stop screw is backed off until firing pin falls. Trigger stop screw is then backed off 1/16 turn.



**6** Reassemble in reverse. When reassembling firing mechanism, place metal sleeve over front of firing pin, reassemble mainspring and bolt plug on firing pin, and screw bolt plug into bolt. Then, replace firing pin head and firing pin cross pin on firing pin. While unscrewing bolt plug, insert coin between bolt plug and firing pin head, complete unscrewing plug, and remove metal sleeve. Screw firing pin assembly into bolt until front of firing pin head matches small cocking notch on rear edge of bolt. Remove coin to allow firing pin head to snap into cocking notch. With safety in forward (fire) position, replace assembled bolt in rifle. Firing pin must be cocked to replace bolt in rifle. If firing pin is uncocked, clamp firing pin head in vise, and rotate bolt handle upward until front of firing pin head engages cocking notch on bolt.



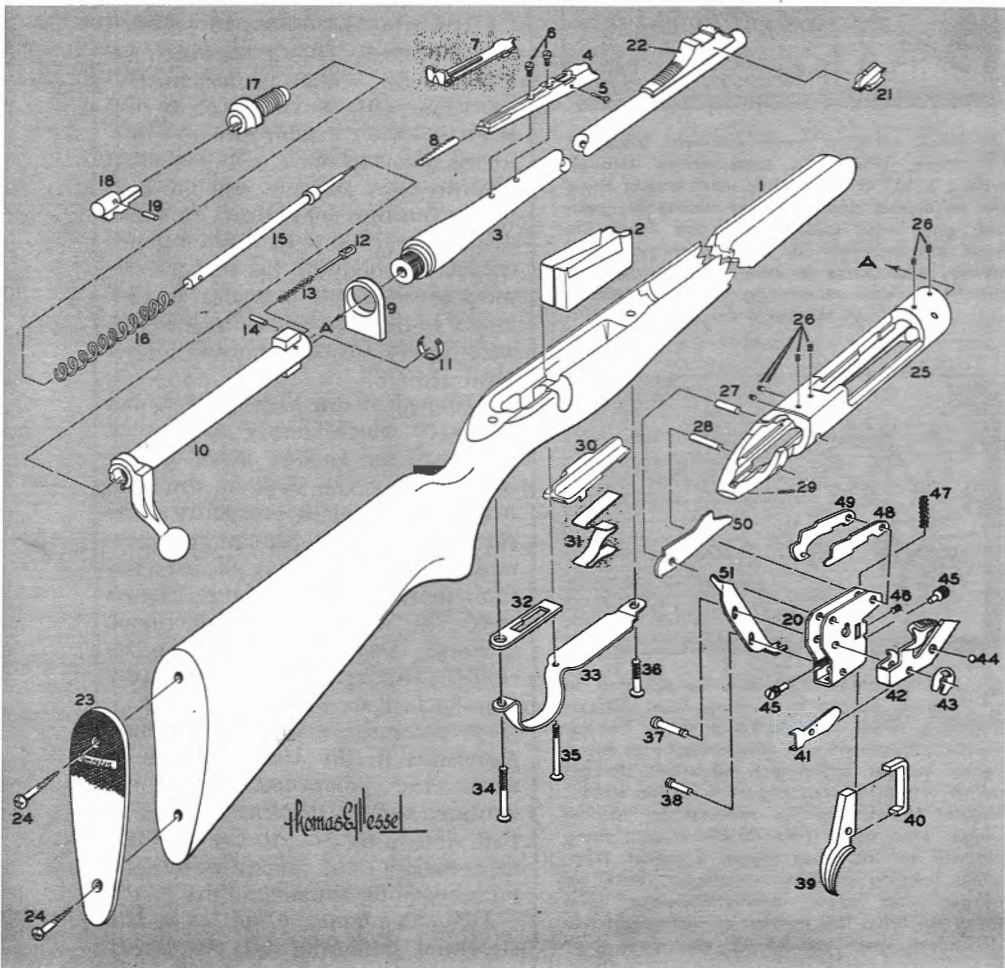


# Remington 721-722 Rifle

By Thomas E. Wessel

ONE of the first high power rifles of new design offered after World War II was the Remington Model 721, announced in the early spring of 1948. It was shortly followed by the Model 722 with its action  $\frac{1}{8}$ " shorter than that of the Model 721. These modern bolt-action rifles were designed for ease of manufacture, with receivers and bolt bodies machined from round bar stock. Striker mechanism is of speed-lock type with short firing pin fall. The modern single-stage trigger is adjustable for both weight of pull and backlash. The thumb-operated safety is conveniently positioned on the right side of the receiver tang in rear of the bolt handle.

The design of the bolt is particularly noteworthy as the cartridge head is almost completely shrouded by the counterbored bolt head. This was made possible by the unique circular-spring extractor fitted within the counterbore. The ejector, in the form of a small spring-loaded plunger, is also contained within the counterbore. The combination of this extractor and ejector eliminated need for the customary hook-type spring extractor and extractor collar present on most Mauser-type turnbolt actions. It also eliminated necessity for cutting an ejector slot in the upper locking lug, which is undesirable from the standpoint of good design. The Model 721-722 bolt is assembled by brazing the handle and forepart bearing the locking lugs to the cylindrical bolt body. The handle is so designed that no



## Parts Legend

1. Stock
2. Magazine
3. Barrel
4. Rear sight base
5. Rear sight screw
6. Rear sight base screw (2)
7. Rear sight assembly
8. Rear sight step
9. Barrel bracket
10. Bolt
11. Extractor
12. Ejector
13. Ejector spring
14. Ejector pin
15. Firing pin
16. Mainspring
17. Bolt plug

18. Firing pin head
19. Firing pin crosspin
20. Housing
21. Front sight
22. Front sight ramp
23. Buttplate
24. Buttplate screw (2)
25. Receiver
26. Receiver plug screw (6)
27. Sear pin
28. Bolt stop pin
29. Bolt stop spring
30. Follower
31. Magazine spring
32. Trigger guide plate
33. Trigger guard
34. Rear guard screw

35. Center guard screw
36. Front guard screw
37. Safety pivot pin
38. Trigger pin
39. Trigger
40. Trigger connector
41. Safety detent spring
42. Safety
43. Safety snap washer
44. Safety detent ball
45. Trigger adjusting screw (2)
46. Trigger stop screw
47. Sear spring
48. Sear
49. Safety cam
50. Bolt stop
51. Bolt stop release



alteration is necessary when a hunting-type scope is fitted to the rifle.

Another noteworthy feature of the Model 721-722 action is the recoil lug, or barrel bracket, which is a simple flat piece installed between barrel and receiver.

To date the Model 721-722 has been offered in .300 H&H Magnum, .30-'06,

.270 Winchester, .308 Winchester, .257 Roberts, .222 Remington, .222 Remington Magnum, and .244 Remington.

A high comb stock for use with scope sights is optionally available at no extra charge.

THOMAS E. WESSEL of Whippany, N. J., is a technical illustrator long interested in firearms.

## A MAN TO REMEMBER

### HENRY DERINGER

*He gave his name  
to a whole class of  
firearms*

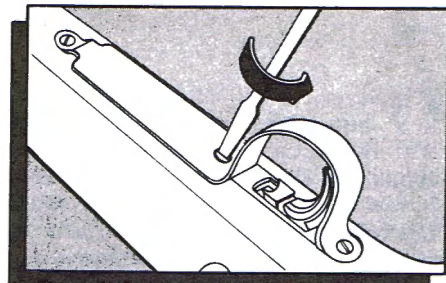
Born—Easton, Pa., 1786

Died—Philadelphia, Pa., 1868

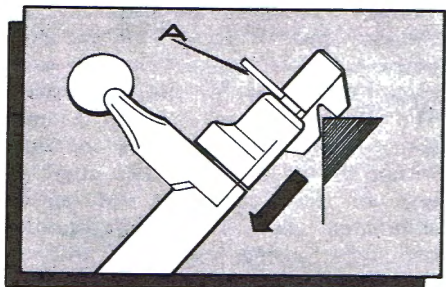
THE son of an immigrant German gunsmith, Henry Deringer was destined to follow in his father's footsteps. At an early age he was apprenticed to a gunsmith in Richmond, Va., and made rifles and other firearms there until he was ready to set up business for himself in Philadelphia in 1806. In 1808 he succeeded in obtaining his first government contract, and thereafter he continued to manufacture rifles, muskets, and pistols for the United States until 1845.

Although it was these government contracts which firmly established Deringer, his civilian arms, particularly during the days of the gold rush, really brought prosperity. His rifles and dueling pistols were very well received, and above all there was the short, single-shot percussion pistol that made the Deringer name famous. According to his own account, Deringer first began the manufacture of this pistol in 1825. In so doing, he was one of the first gunsmiths in the United States to adopt the percussion system of ignition, and he steadfastly clung to that system, refusing to the very end to consider the manufacture of breech-loading cartridge arms.

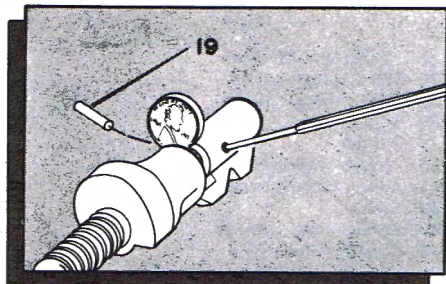
Deringer's contribution lay in the structural design of his pistol. It was compact, sturdy, and lethal. It suited exactly the mood and needs of the times when a man never knew at what moment he might need to defend his life and property and thus was thankful for an easily carried and unobtrusive but effective weapon. Deringer held no patents on his pistol, and so had many imitators, but the fame of his design and craftsmanship spread so quickly that almost all of them were forced to do homage by trying to associate their products in some way with his name. Thus, the origin of derringer, with 2 r's.—HAROLD L. PETERSON



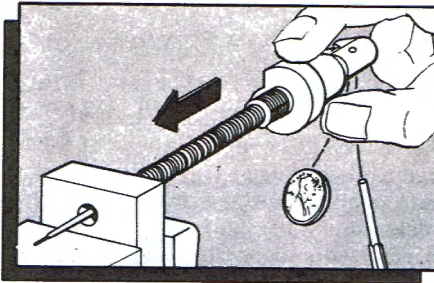
**1** To remove barrel and action from stock: Remove front guard screw (36), center guard screw (35), and rear guard screw (34). Use proper size screwdriver to avoid burring screw slots. Next, lift away trigger guard (33), magazine spring (31), with follower (30), and trigger guide plate (32). Magazine (2) will remain either in receiver (25) or in stock (1). In reassembling barrel and action to stock, insure that magazine is resealed properly in receiver



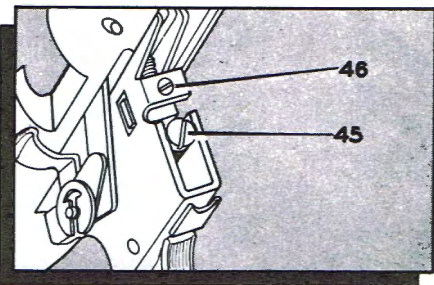
**2** To remove firing pin assembly: Pull firing pin head rearward until a coin (A) can be inserted between it and bolt plug (17). A convenient method is to catch notch on firing pin head on a sharp corner. Unscrew bolt plug to remove assembly from bolt (10). **Caution:** Do not disturb coin; should it be inadvertently knocked out, great difficulty will be experienced in repulling firing pin head



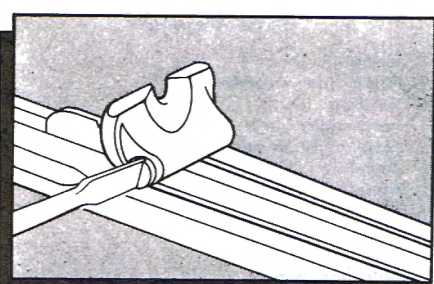
**3** To further disassemble firing pin, drive out firing pin crosspin (19) using a flat-nosed center punch, leaving punch in hole to hold parts together. This prevents the main spring (16) tension from forcing them apart



**4** Next, using a small vise-held block of wood, which has been drilled through with a 3/16" drill, insert forward end of firing pin as shown and compress mainspring with bolt plug until coin, punch, and firing pin head can be removed, or drop away. Apply steady, even force to bolt plug. Slowly and carefully release mainspring tension. Assemble in reverse order



**5** Pull of trigger (39) may be adjusted to desired weight by turning front trigger-adjusting screw (45) clockwise for a heavier weight adjustment and counterclockwise for a lighter weight adjustment. (**Caution:** Do not adjust or remove rear trigger adjusting screw.) Trigger travel may be reduced by turning trigger stop screw (46) clockwise until firing pin will not fall when trigger is pulled. Then, while keeping pressure on trigger, back off trigger stop screw, counterclockwise, until firing pin falls. This method of adjustment will allow least amount of overtravel



**6** To adjust for windage, rear sight plate may be moved to left by turning the windage screw clockwise or to right by turning screw counterclockwise





# REMINGTON MODEL 740-742 RIFLE

By Thomas E. Wessel

THE Model 740 Woodsmaster high power center-fire rifle, offered in 1955 by Remington Arms Co., Inc., Ilion, N. Y., is essentially an autoloading version of the Model 760 slide-action rifle introduced in 1952. Of hammerless, solid-frame construction with side ejection, the Model 740 is gas-operated with dual action bars and multiple-lug rotating breech bolt locking into the barrel assembly. The detachable box magazine holds 4 cartridges. Safety is cross-bolt type, in rear of trigger guard.

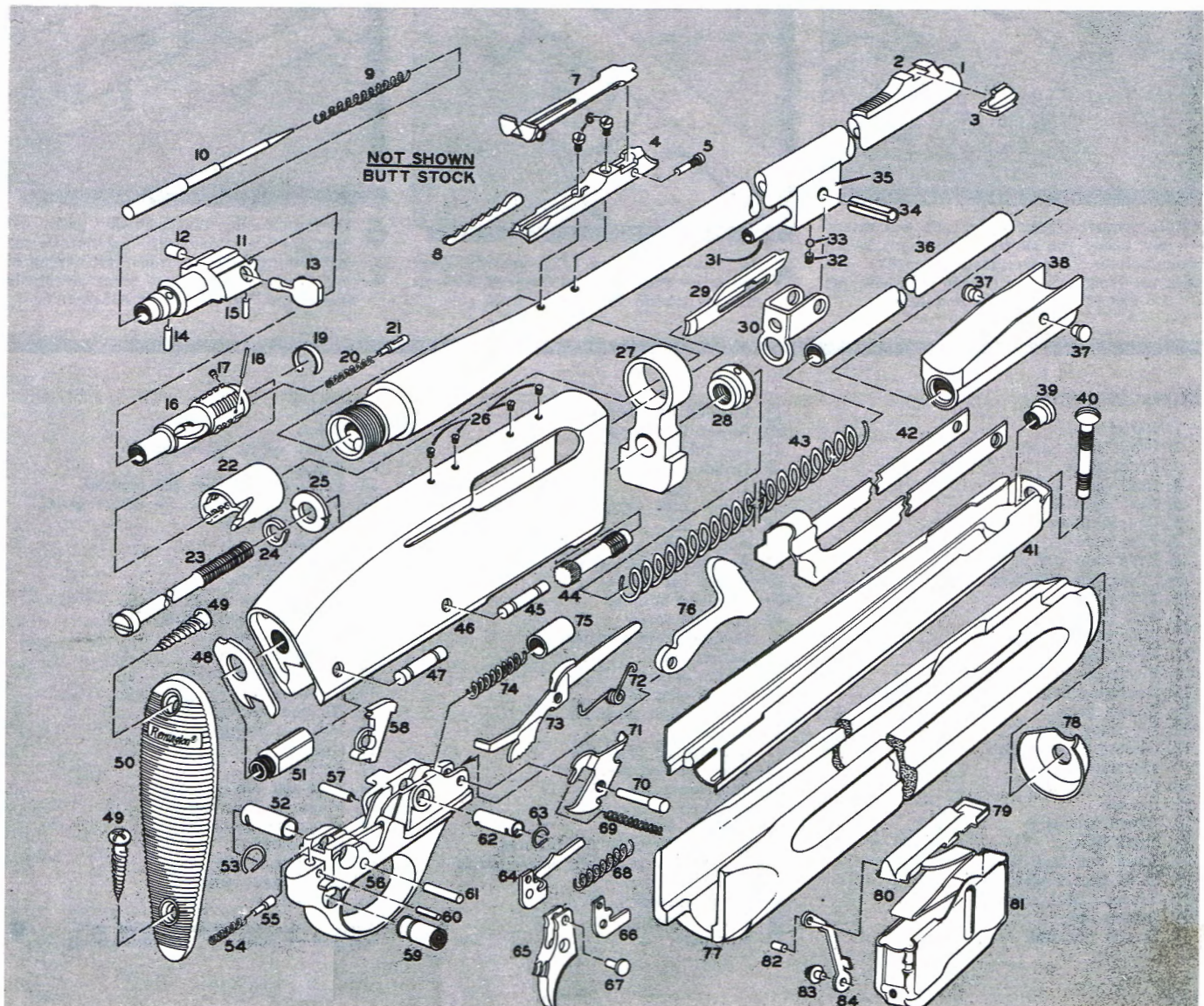
The Model 740 was first offered in cal. .30-'06, but the list of chamberings

was expanded to include the .308 Winchester, .280 Remington, and .244 Remington. Both standard and deluxe grades were available. At no extra cost buttstocks could be had with high comb for use with scope sights.

Functioning cycle of the Model 740 is relatively simple. A measured portion of gas is tapped through a gas port in the lower midsection of the barrel when the gun is fired. This gas drives the action bar assembly to the rear, which carries with it the bolt carrier attached to the bolt with cam pins which work in cam ways in the bolt. These cam ways

are cut to provide a slight delay between the time the action bar begins its rearward movement and the bolt starts to rotate. This delay allows the bullet to clear the muzzle, and chamber pressure to subside before the bolt begins to unlock. As the bolt continues its rearward movement the cartridge case is extracted and ejected and the hammer cocked. The action spring then forces the action bar assembly forward, at the same time chambering a fresh cartridge from the magazine. The rifle is now ready to fire.

No adjustment of the mechanism is required to properly function commer-





cial ammunition with different bullet weights. Performance of the Model 740 with handloaded ammunition is not always satisfactory unless the cartridge cases are full-length resized to dimensions of factory ammunition.

In 1960, the Model 740 was superseded by the Model 742, which appears

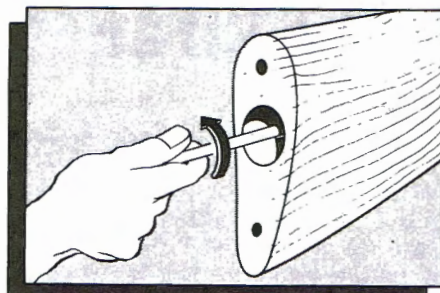
identical, but which does have differences in details. Perhaps the principal difference is that the barrel can be removed from the receiver without too much difficulty. This involves a change in the breech ring nut (28), which in the Model 742 is a hexagon nut that can be removed with a common wrench,

whereas in the Model 740 it was a capstan nut requiring a special spanner.

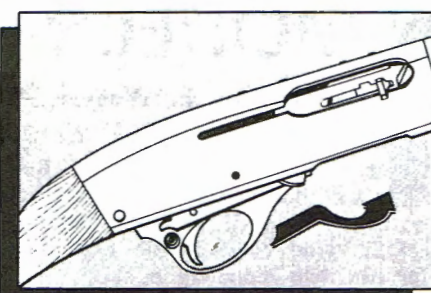
The earlier Model 740 rifles were quite sensitive to variations in the degree of tightness with which the fore-end screw was set up, and a spacing block had to be used.

In the later Model 740 rifles and in the new Model 742 this is accomplished by making the fore-end screw with 2 separate threaded portions, each thread having a different pitch. When the screw is tightened, the parts are drawn together by the differential action of the varying pitches, and the fore-end comes up tight with a small clearance remaining between its rear end and the front of the receiver.

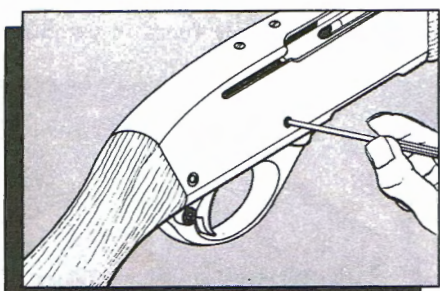
The cam in the bolt which turns it to lock and unlock has been changed in form to give a smoother transition from longitudinal motion to rotary motion, the height of the ejection opening has been slightly increased, and other small changes have been made.



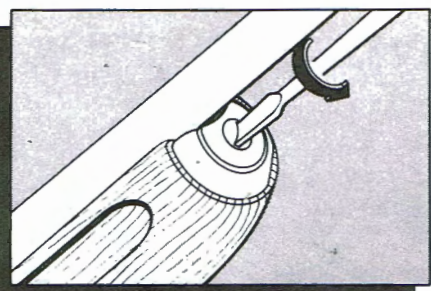
**1** To remove stock, first remove buttplate screws (49) and then buttplate (50), using a Philips-head screwdriver. Next, using a long-shanked screwdriver, remove stock bolt (23). Stock bolt lock washer (24), stock bolt washer (25), and stock may be pulled away from receiver (46)



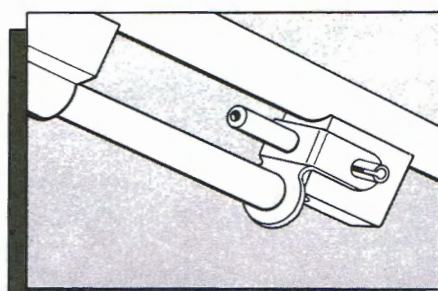
**3** Next, lift out fire control unit by moving it slightly forward and tipping it slightly to clear disconnecter (73). When reassembling, place safety (59) on "Safe" (red band *not* showing) and, with mechanism in cocked position, insert front end of trigger plate into bottom of receiver, rotating unit counterclockwise to clear disconnecter. Push rearward, align holes, and drive in trigger plate pins



**2** To remove trigger plate (56) and assembly, called fire control mechanism by the manufacturer, remove magazine (81) and drift out front and rear trigger plate pins (45 and 47). Use a flat-nosed punch



**4** To remove fore-end (77), unscrew fore-end screw (40) and pull fore-end forward towards muzzle and remove from gun



**5** During cleaning, take care that jet on gas tube (31) is undamaged and not burred or closed at nozzle end. Proper functioning of the arm depends on this jet being absolutely undamaged. The jet itself is self-cleaning

## Parts Legend

1. Barrel
2. Front sight ramp
3. Front sight
4. Rear sight base
5. Rear sight screw
6. Rear sight base screw (2)
7. Rear sight
8. Rear sight step
9. Firing pin retracting spring
10. Firing pin
11. Bolt carrier
12. Cam pin
13. Operating handle
14. Firing pin retaining pin
15. Operating handle retaining pin
16. Breech bolt
- \*17. Extractor rivet
18. Ejector retaining pin
- \*19. Extractor
20. Ejector spring
21. Ejector
- \*22. Barrel extension
23. Stock bolt
24. Stock bolt lock washer
25. Stock bolt washer
26. Receiver plug screw (4)
- \*27. Breech ring
28. Breech ring nut

29. Ejection port cover
30. Action tube support
31. Gas tube
32. Orifice screw
33. Orifice ball
34. Action tube support pin
35. Barrel lug
36. Action tube
- \*37. Action bar rivet (2)
38. Action bar sleeve
- \*39. Fore-end bushing
40. Fore-end screw
- \*41. Fore-end reinforcement
- \*42. Action bar
43. Action spring
44. Breech ring bolt
45. Front trigger plate pin
46. Receiver
47. Rear trigger plate pin
48. Stock bearing plate
49. Buttplate screw (2)
50. Buttplate
51. Receiver stud
52. Rear trigger plate pin bushing
53. Rear trigger plate pin detent spring
54. Safety spring
55. Safety plunger
56. Trigger plate
57. Sear pin

58. Sear
59. Safety
60. Safety spring retaining pin
61. Trigger pin
62. Front trigger plate pin bushing
63. Front trigger plate pin detent spring
64. Left connector
65. Trigger
66. Right connector
67. Connector pin
68. Sear spring
69. Magazine latch spring
70. Hammer pin
71. Magazine latch
72. Disconnecter spring
73. Disconnecter
74. Hammer spring
75. Hammer plunger
76. Hammer
77. Fore-end
78. Fore-end cap
79. Magazine follower
80. Magazine spring
81. Magazine
82. Bolt release pin
83. Bolt release button
- \*84. Bolt release

\* Factory assembled to other major part. Not recommended for field disassembly.





# Remington Model 760 Gamemaster Rifle

By Thomas E. Wessel

THE Model 760 Gamemaster slide-action hammerless center-fire rifle, announced early in 1952 by Remington Arms Co., Inc., Ilion, N. Y., was introduced as a replacement for the Remington Model 141 Gamemaster which was discontinued in 1951. Although both are 'pump' or slide-action rifles, they are mechanically dissimilar.

The action design and bolting system of the Model 141 were not suitable for modern high-pressure cartridges and, as early as 1940, Remington engineers were working on a replacement. Although shelved during World War II, this development program was rein-

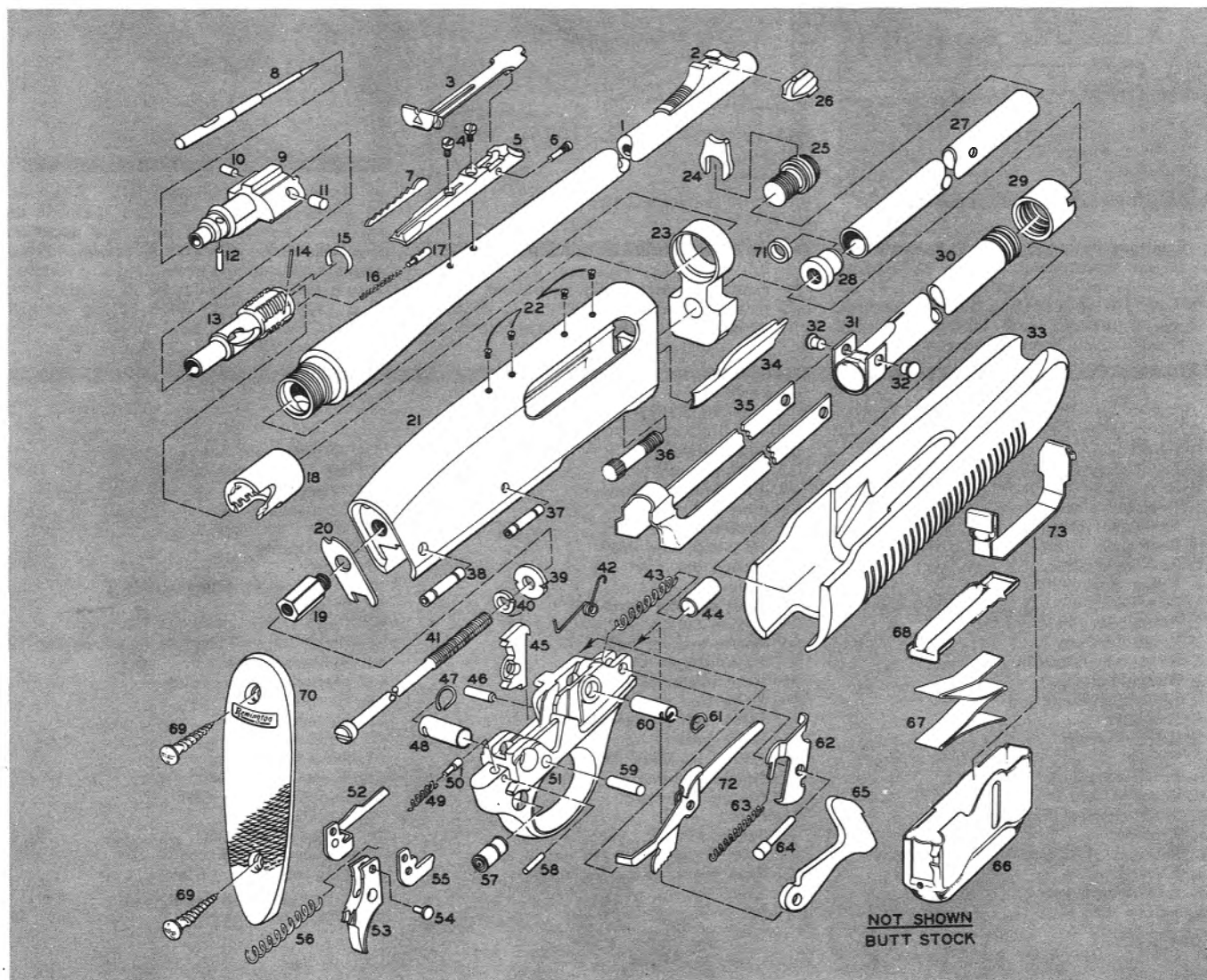
stated after the war and the Model 760 was the end product. It was initially offered in cal. .30-'06, .300 Savage, and .35 Remington. The list of chamberings was subsequently expanded to include cal. .222 Remington, .257 Roberts, .244 Remington, .270 Winchester, .280 Remington, and .308 Winchester.

The Model 760 is classed as a solid-frame rifle although the barrel does not screw directly into the receiver.

The barrel screws into the barrel extension carrying the breech-bolt locking lug recesses, and from a practical standpoint the barrel, barrel extension, and barrel bracket represent an integral unit.

The barrel extension and barrel bracket are fitted very tightly to the barrel, and their removal requires perfectly fitted vise jaws to prevent deformation of these parts.

The breech bolt is of interrupted thread type, with 4 separate banks of multiple lugs engaging locking recesses in the barrel extension. The bolt face is recessed for the cartridge head and is fitted with the same type of horseshoe extractor and plunger ejector as used in all Remington center-fire rifles introduced after World War II. This breeching system and an enclosed receiver serve to protect the shooter's face





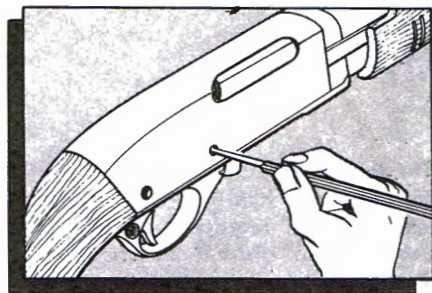
and eyes from gas or particles resulting from a punctured primer or split case.

A convenient feature of the Model 760 is its detachable 4-cartridge-capacity box magazine which must be removed from the rifle for loading. With the empty magazine in place, the chamber

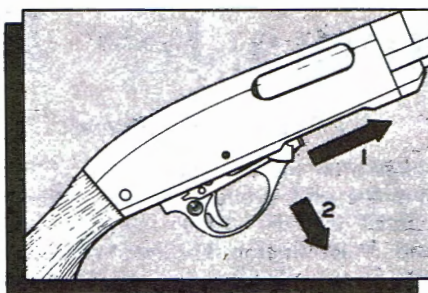
can also be loaded by dropping a cartridge into the ejection port and then closing the action. If the magazine is missing, the rifle should be inverted prior to inserting the cartridge.

The safety mechanism is of cross-bolt type and is mounted in rear of the

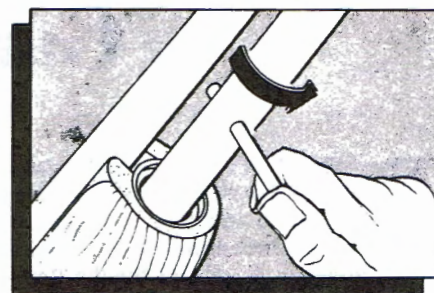
trigger guard loop. The action is locked shut when the hammer is cocked, but can be unlocked and opened by simultaneously depressing the action bar lock button extending from the left front face of the trigger guard loop and pulling the fore-end to the rear.



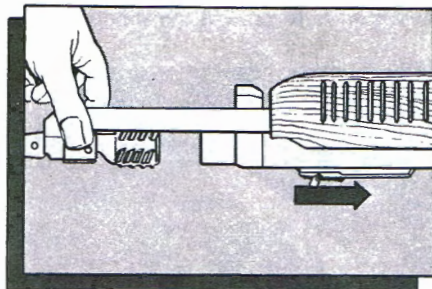
**1** To remove trigger plate (51) and assembly—called the fire control mechanism by the manufacturer—place safety (57) on "Safe" (red band *not* showing), remove magazine (66) by pushing magazine latch (62) forward, then drift out front and rear trigger plate pins (37 and 38)



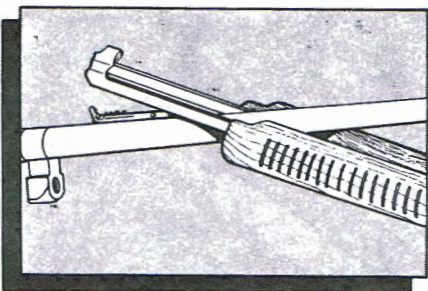
**2** Next, (1) slide fire control mechanism forward and then (2) away from gun, tipping mechanism slightly to clear action bar lock (72). When reassembling, place safety on "Safe", open action half way, and with mechanism in cocked position insert front of trigger plate into bottom of receiver (21). Rotate unit clockwise to clear action bar lock and slide unit fully into opening. Push it rearward and align pin holes. Insert front and rear trigger plate pins



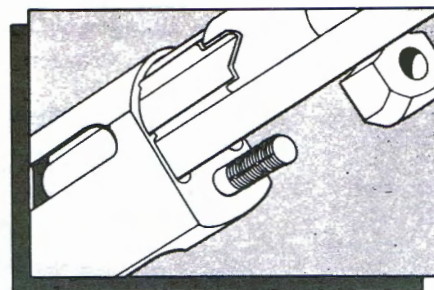
**3** To remove barrel (1) and breech mechanism from receiver, remove magazine, press action bar lock, and open action. Make sure chamber is empty. Holding rifle on a flat padded surface with the magazine opening upward, insert a snug fitting steel pin into holes exposed in action tube (27). Turn as indicated until action tube can be removed



**4** Continue by closing action. Remove barrel and breech mechanism by pulling forward out of receiver. Rest fore-end (33) on a flat surface and, holding bolt carrier (9), pull barrel forward until breech bolt (13) releases from barrel extension (18)



**5** Push bolt carrier with assembled breech bolt free of action bar (35), then lift front end of barrel, and release downward between the double action bars



**6** Reassemble in reverse order. When assembling barrel to fore-end assembly, do not spread action bars farther than necessary to get barrel bracket (23) in position. When assembling barrel and breech parts to receiver, be sure indent in curved end of ejection port cover (34) is locked ahead of lug on bolt carrier. Cover should enter small slot in top of receiver freely. Do not force it

## Parts Legend

1. Barrel
2. Front sight ramp
3. Rear sight
4. Rear sight base screw (2)
5. Rear sight base
6. Rear sight screw
7. Rear sight step
8. Firing pin
9. Bolt carrier
10. Small cam pin
11. Large cam pin
12. Firing pin retaining pin
13. Breech bolt
14. Ejector retaining pin
15. Extractor
16. Ejector spring
17. Ejector
18. Barrel extension
19. Receiver stud
20. Stock bearing plate
21. Receiver
22. Receiver plug screw (4)
23. Barrel bracket
24. Action tube guard
25. Action tube cap

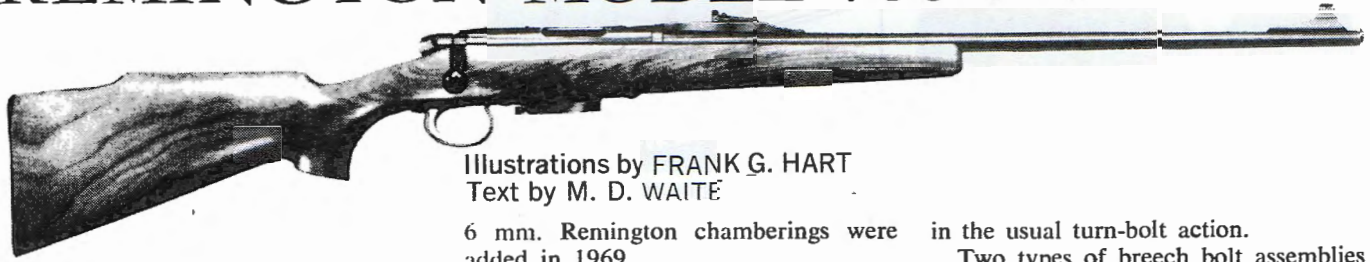
26. Front sight
27. Action tube
28. Barrel bracket nut
29. Fore-end tube nut
30. Fore-end tube
31. Fore-end tube yoke
32. Action bar rivet (2)
33. Fore-end
34. Ejection port cover
35. Action bar
36. Barrel bracket bolt
37. Front trigger plate pin
38. Rear trigger plate pin
39. Stock bolt washer
40. Stock bolt lock washer
41. Stock bolt
42. Action bar lock spring
43. Hammer spring
44. Hammer plunger
45. Sear
46. Sear pin
47. Rear trigger plate pin detent spring
48. Rear trigger plate bushing
49. Safety spring
50. Safety plunger

51. Trigger plate
52. Left connector
53. Trigger
54. Connector pin
55. Right connector
56. Sear spring
57. Safety
58. Safety spring retaining pin
59. Trigger pin
60. Front trigger plate pin bushing
61. Front trigger plate pin detent spring
62. Magazine latch
63. Magazine latch spring
64. Hammer pin
65. Hammer
66. Magazine
67. Magazine spring
68. Magazine follower
69. Buttplate screw (2)
70. Buttplate
71. Collar
72. Action bar lock
- \*73. Magazine filler piece

\* Cals. .35 .244, .222 Remington, and .308 Winchester only.



# REMINGTON MODEL 788 RIFLE



Illustrations by FRANK G. HART  
Text by M. D. WAITE

**F**EATURING a tubular receiver with nine bolt locking lugs engaging locking recesses within the receiver bridge, the Remington Model 788 bolt-action rifle was introduced in 1967. A sporting rifle, the Model 788 was chambered initially for a variety of center-fire deer-class and varmint cartridges including the .30-30, .44 Remington Magnum, .222 Remington and .22-250 Remington. The .308 Winchester and

6 mm. Remington chamberings were added in 1969.

The rear locking action of this rifle is an advantage in that cartridges do not have to cross a lug recess in the receiver ring as they feed from the magazine to the chamber. This contributes to reliable feeding, especially with rimmed cartridges.

The nine bolt locking lugs are arranged in three series of three lugs each with each series spaced 120° apart. Bolt rotation is 68° instead of 90° as

in the usual turn-bolt action.

Two types of breech bolt assemblies are used with this rifle. Type No. 1, with rotating bolthead, is employed with the rimmed calibers. Type No. 2, of one-piece design, is used for the rimless calibers.

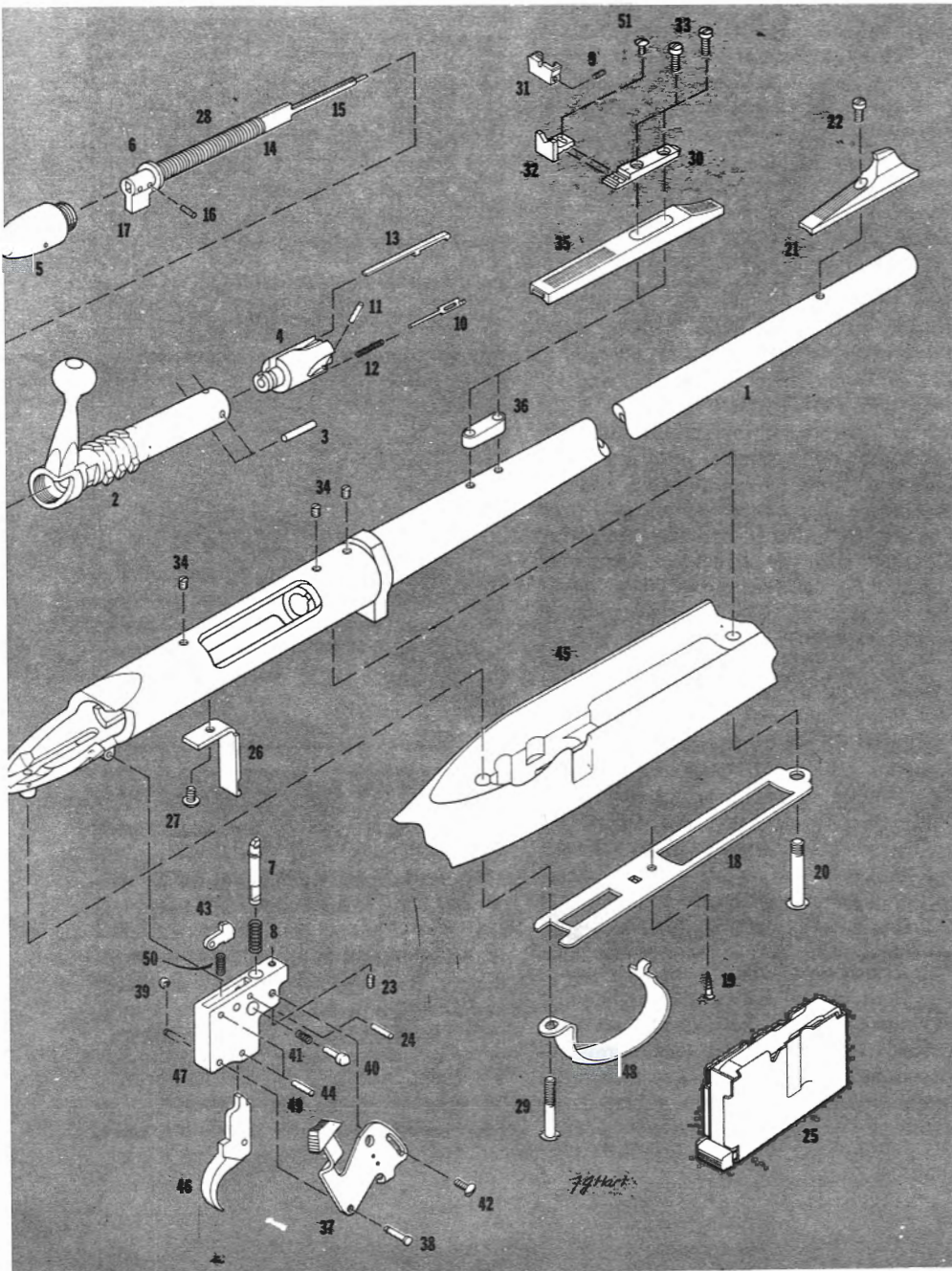
Receiver of the Model 788 is drilled and tapped for top scope mounts and metallic receiver sights. Trigger pull is adjusted at the factory. An extremely fast lock was designed into this rifle to enhance its performance in the field. ■

## PARTS LEGEND

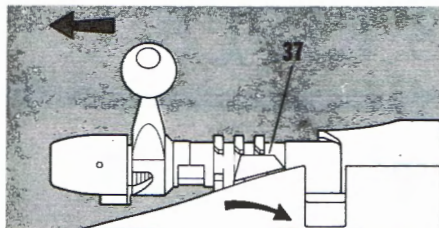
- |  |                                       |
|--|---------------------------------------|
| 1. Barrel assembly (includes receiver) | 26. Magazine guide bar                |
| 2. Bolt*                               | 27. Magazine guide bar screw          |
| 3. Bolt assembly pin*                  | 28. Mainspring                        |
| 4. Bolt head*                          | 29. Rear guard screw                  |
| 5. Bolt plug                           | 30. Rear sight base                   |
| 6. Bolt plug washer                    | 31. Rear sight eye-piece              |
| 7. Bolt stop                           | 32. Rear sight leaf                   |
| 8. Bolt stop spring                    | 33. Rear sight screw (2)              |
| 9. Elevation screw                     | 34. Receiver plug screw (3)           |
| 10. Ejector*                           | 35. Rib (rear sight)                  |
| 11. Ejector pin*                       | 36. Rib spacer (rear sight)           |
| 12. Ejector spring*                    | 37. Safety                            |
| 13. Extractor*                         | 38. Safety pivot pin                  |
| 14. Firing pin assembly                | 39. Safety pivot pin retaining washer |
| 15. Firing pin                         | 40. Safety plunger                    |
| 16. Firing pin cross pin               | 41. Safety plunger spring             |
| 17. Firing pin head                    | 42. Safety retaining screw            |
| 18. Floor plate                        | 43. Sear                              |
| 19. Floor plate screw                  | 44. Sear pin                          |
| 20. Front guard screw                  | 45. Stock                             |
| 21. Front sight                        | 46. Trigger                           |
| 22. Front sight screw                  | 47. Trigger housing                   |
| 23. Housing lock screw                 | 48. Trigger guard                     |
| 24. Housing pin                        | 49. Trigger pin                       |
| 25. Magazine assembly                  | 50. Trigger spring                    |
|  | 51. Windage screw                     |

\* Used on .30-30 and .44 Remington Magnum calibers only.

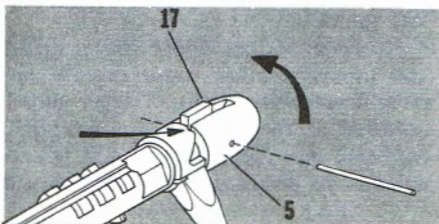
NOTE: Buttplate and buttplate screws not shown on drawing.



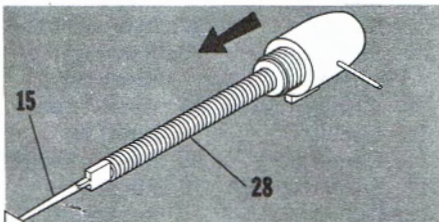




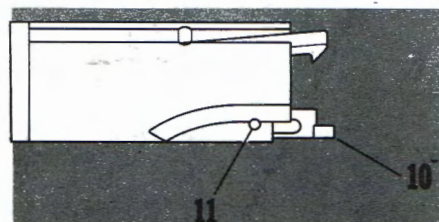
**1** Check action to make sure rifle is unloaded. Push in magazine latch and remove magazine. Lift bolt handle and pull bolt rearward to bolt stop. Rotate safety (37) forward as far as possible. This will depress bolt stop and allow removal of bolt from rifle.



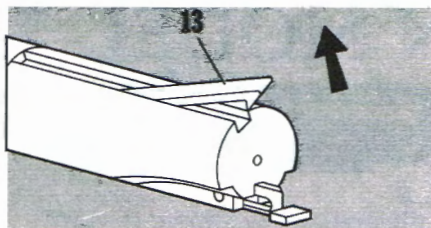
**2** With bolt removed, grasp bolt plug (5) firmly and rotate clockwise until firing pin head (17) snaps out of cocking notch (arrow). Insert a small diameter slave pin through aligned holes in bolt plug and firing pin head. This pin holds firing pin head retracted into bolt plug. Unscrew bolt plug and remove firing pin assembly (14) (with bolt plug) from bolt.



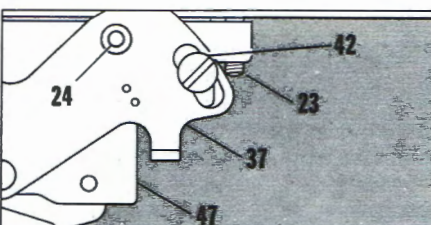
**3** Support end of firing pin (15) against firm surface and exert forward pressure on bolt plug against tension of mainspring (28). This will relieve pressure on small slave pin, which can then be removed. Carefully release pressure on bolt plug and remove from firing pin assembly. Special factory processes are used to make up the firing pin assembly; disassembly is not recommended.



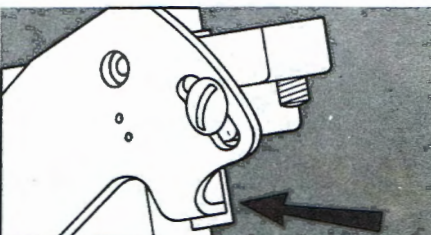
**4** To disassemble ejector (10) (used on bolt Type No. 1 for rimmed calibers .30-30 and .44 Remington Magnum) drive out ejector pin (11) and remove ejector and ejector spring (12). (See Fig. 10 for ejector used on bolt Type No. 2).



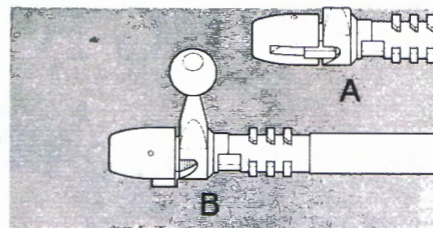
**5** To disassemble extractor (13) (used on bolt Type No. 1) grasp claw of extractor and lift up carefully to free stud on bottom of extractor from locating hole in bolt. When stud is clear, pull extractor forward and away from bolt. When reassembling, end of extractor should fit inside of bolt body between the two bolt assembly pins. (See Fig. A for extractor used on bolt Type No. 2) Unscrew front and rear guard screws (20) and (29) and remove stock.



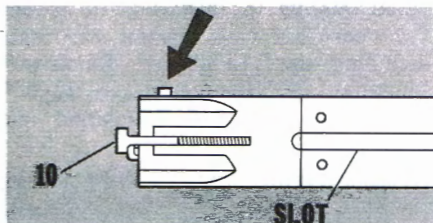
**6** Back off housing lock screw (23) one complete turn. Drive out housing pin (24) through large hole in top of safety and remove complete housing assembly from receiver. Lift sear (43) and remove trigger spring (50) from housing (47). Push safety pivot pin retaining washer (39) from end of pivot pin (38) and remove pin. NOTE: Safety plunger is under spring load beneath safety. Carefully unscrew and remove safety retaining screw (42) and safety (37). Lift safety plunger (40) and safety plunger spring (41) from housing. Bolt stop (7) and bolt stop spring (8) may then be removed. Remaining components comprising the trigger housing sub-assembly are factory assembled and disassembly is not recommended.



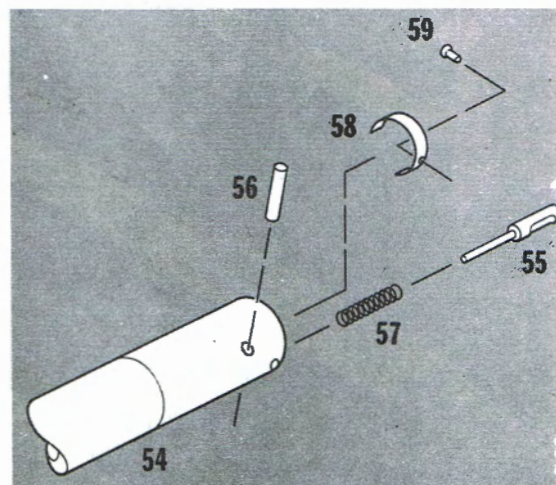
**7** Reassemble rifle in reverse order. Bent tab on bottom of safety must fit into recess in bottom of bolt stop (arrow). Tighten housing lock screw until assembly is snug. Bolt stop must work freely in receiver when actuated by safety.



**8** Bolt must be cocked to reassemble into rifle. When uncocked, firing pin head will snap forward into cocking cam at rear of bolt (A). Clamp firing pin head in vise jaws and raise bolt handle until firing pin head moves out of cocking cam and snaps into cocking notch on rear of bolt (B).



**9** To reassemble Type No. 1 bolt assembly (rotary head) into receiver, align ejector (10) with slot on bottom of bolt body. With bolt head guide pin (arrow) in 9 o'clock position, push bolt forward into receiver. For one piece bolt assembly (Type No. 2), simply place bolt into receiver with handle in 2 o'clock position and push forward.



**10** Extractor and ejector system used with bolt Type No. 2 for rimless calibers 6 mm. Remington, .308 Winchester, .243 Winchester, .222 Remington, and .22-250 Remington. Extractor is riveted to bolt in proper position at the factory. Disassembly is seldom necessary and should only be attempted by a qualified gunsmith.

54. Bolt  
55. Ejector  
56. Ejector pin  
57. Ejector spring  
58. Extractor  
59. Extractor rivet ■



# Remington Model 870

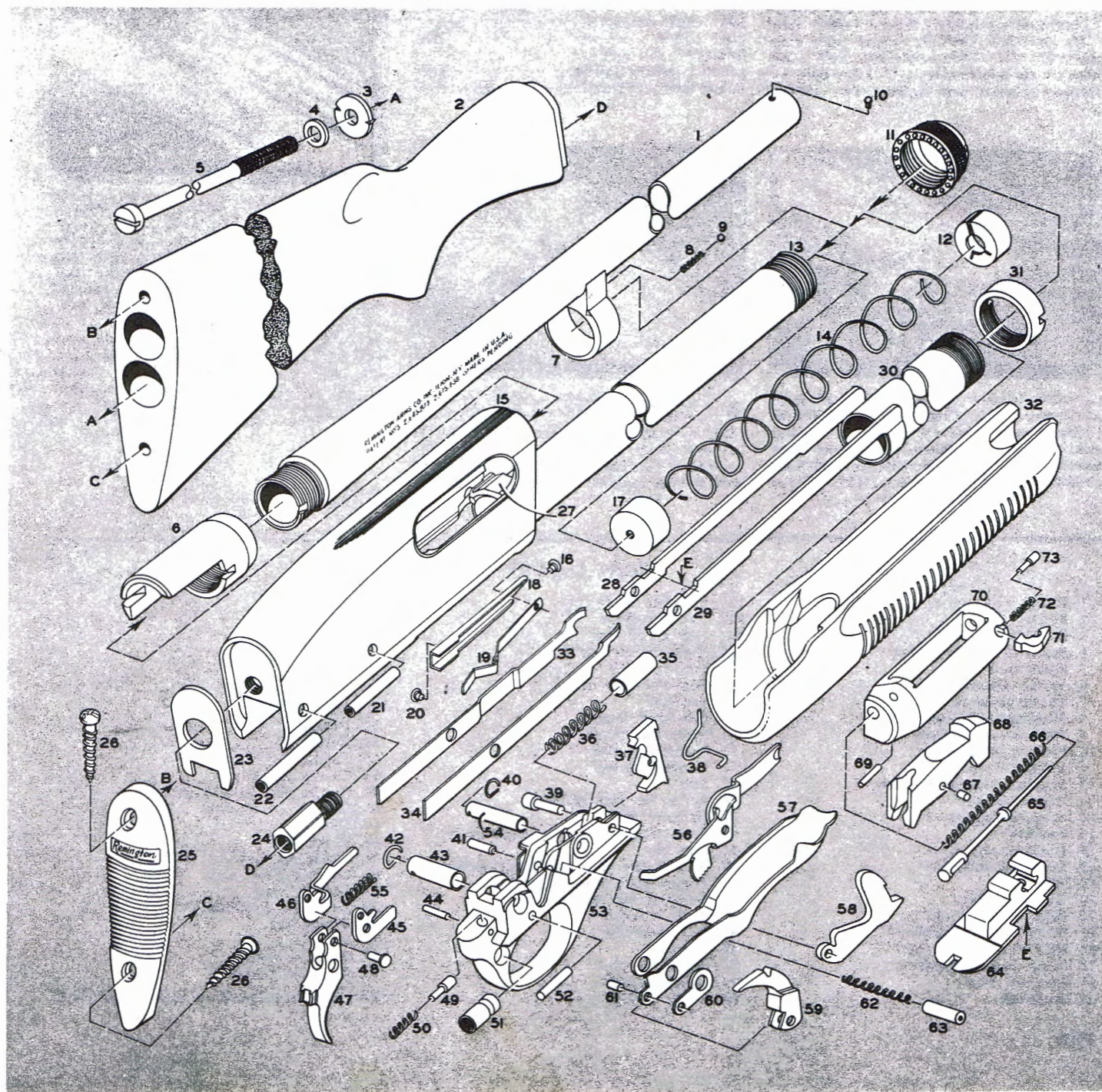
## SHOTGUN

By Thomas E. Wessel

**T**HE Remington Model 870 Wingmaster side-ejection slide-action shotgun was introduced early in 1950 by Remington Arms Co., Inc., Ilion, N. Y., as a replacement for the Remington Model 31 shotgun discontinued in 1949.

The Model 870 is available in 20-ga., 16-ga., and 12-ga., with both 2¾" and 3" Magnum chamberings offered in 12-ga. Magazine capacity of the Model 870 in 12-ga. 3" Magnum is 3 shots, others 4 shots.

The Model 870 is offered in several

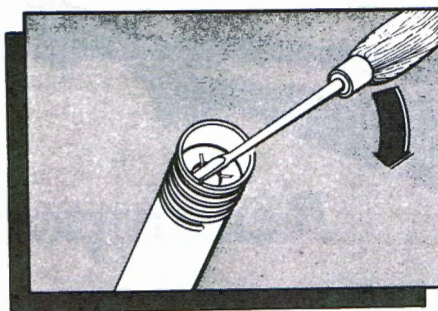




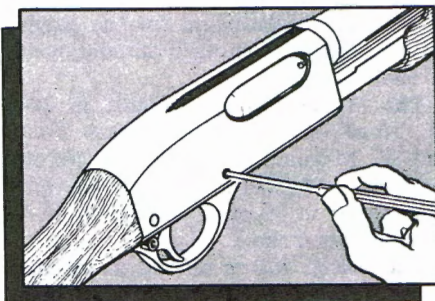
grades and with a wide choice of barrel lengths and borings. Barrels are obtainable with ventilated rib, matted top surface, or plain. A special 12-ga. riot gun with 20" barrel, the Model 870R, is designed for use by guards and law-enforcement officers. For the deer

hunter Remington recently announced the 12-ga. Model 870 RSS with rifle sights to provide more precise shooting with rifled slugs.

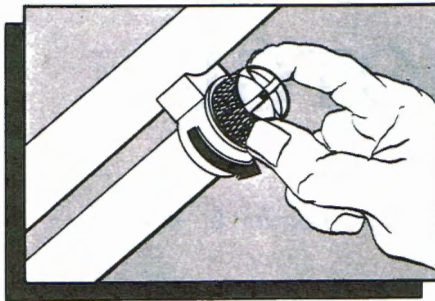
Disassembly of the Model 870 is extremely simple, which makes for great convenience in cleaning.



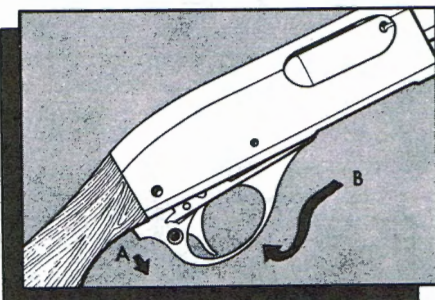
**5** To remove magazine spring (14) and magazine follower (17), insert blade of a small screwdriver into hole in spring retainer (12) and pry retainer from magazine tube (13). Remove retainer slowly to relieve tension of magazine spring. Spring and follower may now be removed



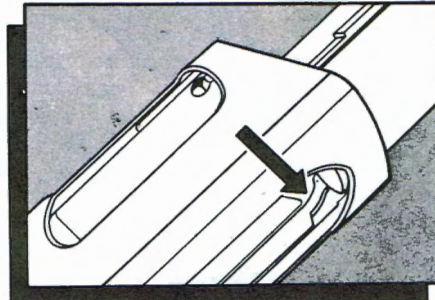
**1** To remove trigger plate (53) and assembly, first set safety (51) on "safe", then drift out front and rear trigger plate pins (21 and 22). When replacing these pins, trigger plate and receiver (15) holes must be properly aligned and show clear passage



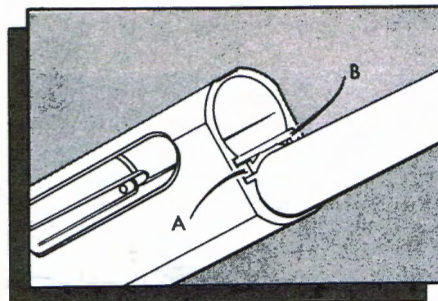
**3** To remove barrel assembly, including barrel extension (6), if the gun is cocked, press action bar lock (56) upward. Move fore-end (32) half way back to open the action. Unscrew magazine cap (11), remove it, and then pull barrel assembly from receiver



**2** Next, lift rear end of trigger plate from receiver (A). Then, slide unit rearward (B), turning it clockwise to clear action bar lock (56). When reassembling trigger plate assembly, rear end of action bar lock must go below end of left connector (46) for gun to function properly



**4** To remove fore-end assembly, including fore-end, breech bolt (70), locking block (68), slide (64), etc., press in front end of left shell latch (33) and slide the assembly forward off magazine tube (13). The barrel must be first removed to effect this operation



**6** Assemble gun in reverse order. Assemble slide to action bars (28) and (29), together with breech bolt assembly. Assemble fore-end tube (30) over magazine tube and insert rear end of action bars (with slide and breech bolt assembly on them) into receiver grooves (A and B). Move assembly rearward gently until it contacts the front end of the right shell latch (34). Press in on right shell latch to clear action bar and slide fore-end gently rearward again until it contacts the left shell latch (33). Press in left shell latch and push fore-end rearward until it is stopped by the action bar lock (56)

## Parts Legend

1. Barrel
2. Stock
3. Stock bolt washer
4. Stock bolt lock washer
5. Stock bolt
6. Barrel extension
- \*7. Barrel guide ring
8. Magazine cap detent spring
9. Magazine cap detent
10. Front sight bead
11. Magazine cap
12. Magazine spring retainer
- \*13. Magazine tube
14. Magazine spring
15. Receiver
16. Front ejector rivet
17. Magazine follower
18. Ejector
19. Ejector spring
20. Rear ejector rivet
21. Front trigger plate pin
22. Rear trigger plate pin
23. Stock bearing plate
24. Receiver stud
25. Buttplate

26. Buttplate screw (2)
- \*27. Barrel support
- \*28. Left action bar
- \*29. Right action bar
30. Fore-end tube
31. Fore-end tube nut
32. Fore-end
33. Left shell latch
34. Right shell latch
35. Hammer plunger
36. Hammer spring
37. Sear
38. Action bar lock spring
39. Hammer pin
40. Front trigger plate pin detent spring
41. Sear pin
42. Rear trigger plate pin detent spring
43. Trigger plate pin bushing
44. Safety spring retaining pin
45. Right connector
46. Left connector
47. Trigger
48. Connector pin
49. Safety plunger
50. Safety spring

51. Safety
52. Trigger pin
53. Trigger plate
54. Carrier pivot tube
55. Sear spring
56. Action bar lock
57. Carrier
58. Hammer
59. Carrier dog
60. Carrier dog washer
61. Carrier dog pin
62. Carrier dog follower spring
63. Carrier dog follower
64. Slide
65. Firing pin
66. Firing pin retractor spring
67. Locking block stud
68. Locking block
69. Firing pin retaining pin
70. Breech bolt
71. Extractor
72. Extractor spring
73. Extractor plunger

\*Part is silver-soldered to other major part.





# REMINGTON MODEL 878 SHOTGUN

Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON

**P**roduced from 1959 to 1962, the Remington Model 878 "Automaster" semi-automatic shotgun with gas-operated action was designed to fire a variety of 12-ga. 2¾" loads from light to magnum without any change or adjustment by the user. This was made possible by a self-adjusting gas piston located in the front of the tubular

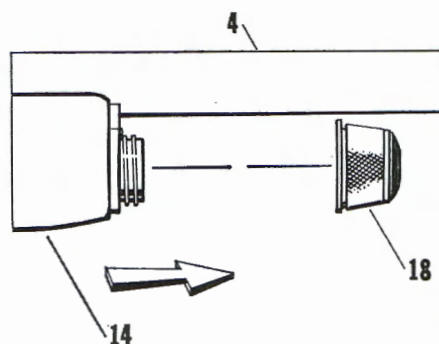
magazine under the barrel.

After the shot load clears the barrel, a small amount of propellant gas is metered through two gas ports to the piston assembly. Piston inertia during initial recoil of the gun causes the piston to be displaced toward the muzzle, and this restricts the amount of gas entering the piston chamber. Amount of restriction is proportional to the recoil and, therefore, to the load being fired.

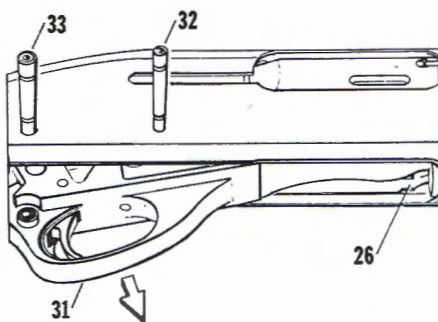
The Model 878 was offered in field and trap versions and several different

grades. Interchangeable barrels with various lengths and chokes were available, but in 12-ga. only. Magazine capacity was two shells. With one shell in the chamber, total capacity of the gun was three rounds.

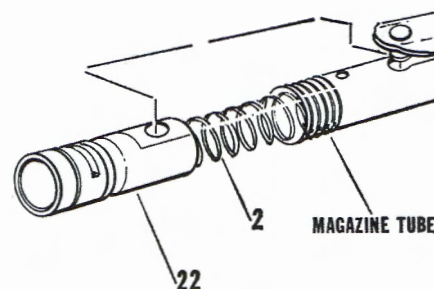
A commonly-encountered version of this gun is the 878A with unchecked walnut stock and fore-end, and no engraving. Less frequently seen are higher grades with checkered stock and fore-end, and game scenes engraved on the receiver sides. Most higher grades of this gun also have a ventilated rib.



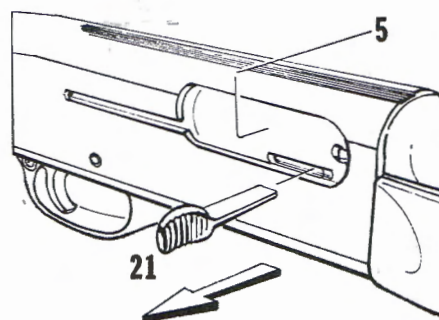
**1** Before disassembling the Model 878, push safety on safe. Red band marking on safety will not show. Make sure magazine and chamber are unloaded. Open action to cock hammer, and close action by depressing carrier. (See arrow and "CLOSE" marking on bottom front of receiver.) Unscrew magazine cap (18) from end of magazine tube. Pull fore-end (14) and barrel assembly (4) out of gun.



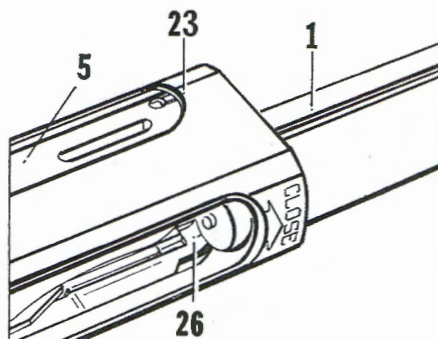
**3** Tap out trigger plate pins (32 & 33). Pull out trigger plate assembly (31). Shell latch, left (26) may fall free. Align shell latch flush with front trigger plate pin when replacing trigger plate assembly, and be sure bent rear tail of disconnect is under left connector.



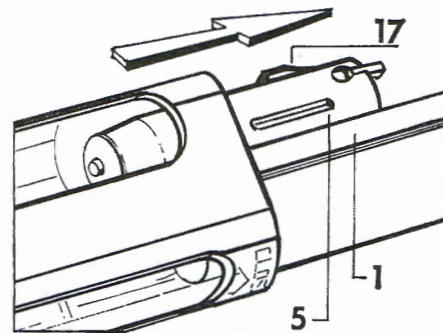
**5** Move action bar assembly forward until stud on front of action bar aligns with stud removal notch, and lift out action bar. Piston assembly (22) and action spring (2) can then be removed from front of magazine tube.



**2** Pull operating handle (21) outward to disassemble from breechbolt (5).

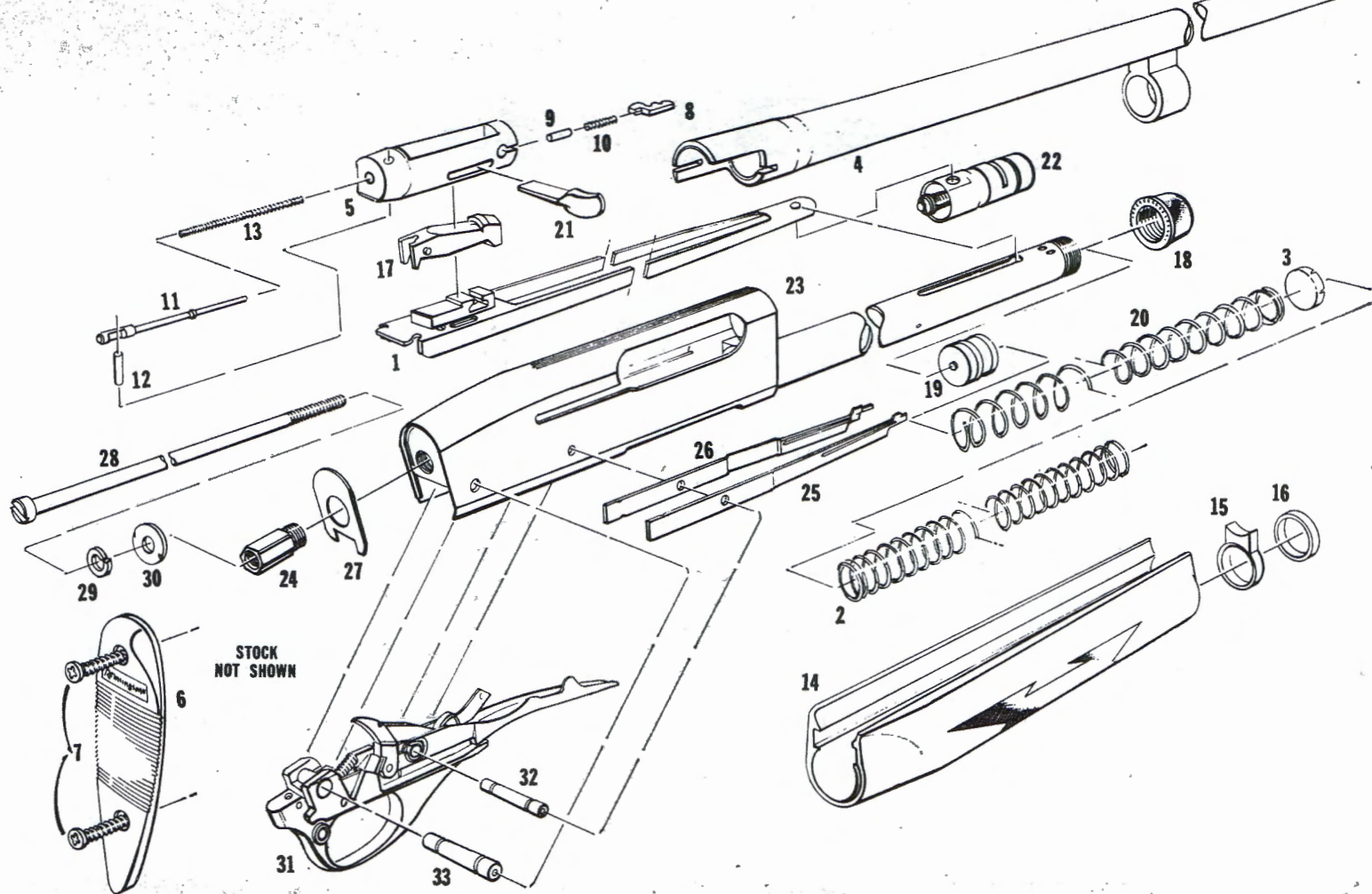


**4** Push breechbolt forward in receiver assembly (23). Depress left shell latch to allow action bar assembly (1) to pass slightly forward on magazine tube.



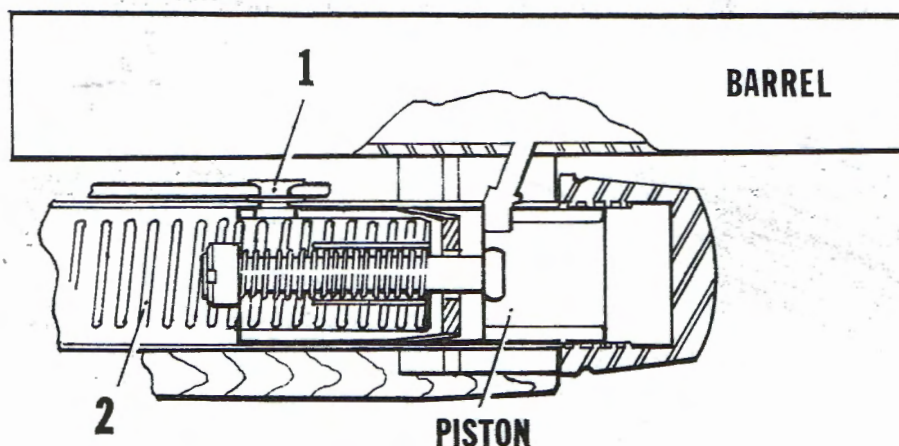
**6** Pull action bar assembly and breechbolt out of receiver. Lift breechbolt with locking block assembly (17) from gun.





#### Parts Legend

- |                        |                                 |                            |                              |
|------------------------|---------------------------------|----------------------------|------------------------------|
| 1. Action bar assembly | 8. Extractor                    | 17. Locking block assembly | 26. Shell latch, left        |
| 2. Action spring       | 9. Extractor plunger            | 18. Magazine cap           | 27. Stock bearing plate      |
| 3. Action spring stop  | 10. Extractor spring            | 19. Magazine follower      | 28. Stock bolt               |
| 4. Barrel assembly     | 11. Firing pin                  | 20. Magazine spring        | 29. Stock bolt lock washer   |
| 5. Breechbolt          | 12. Firing pin retaining pin    | 21. Operating handle       | 30. Stock bolt washer        |
| 6. Buttplate           | 12. Firing pin retractor spring | 22. Piston assembly        | 31. Trigger plate assembly   |
| 7. Buttplate screw (2) | 14. Fore-end                    | 23. Receiver assembly      | 32. Trigger plate pin, front |
|                        | 15. Fore-end ring               | 24. Receiver stud          | 33. Trigger plate pin, rear  |
|                        | 16. Fore-end ring washer        | 25. Shell latch, right     |                              |



**7** After shot leaves barrel, a small amount of propellant gases is metered from barrel to piston assembly through two gas ports. Initial recoil of gun causes piston to be displaced toward muzzle due to piston inertia. This displacement restricts amount of gas metered to piston chamber. Amount of restriction is proportional to recoil and therefore to load being fired. Energy or rearward push applied to piston is thus controlled within practical limits, and the user does not have to make adjustments for light or heavy loads.

Breechbolt is linked to piston by action bar. Rearward push of piston causes breechbolt to unlock and open action. After breech is opened, energy to close action is stored in compressed action spring. ■





# REMINGTON MODEL 1100

By JOHN F. FINNEGAN

INTRODUCED in 1963, the Remington Model 1100 semi-automatic shotgun proved an outstanding success from the start. This gas-operated gun with tubular magazine is offered in field, trap, and skeet versions, and various grades. There is also a deer gun version designed for firing rifled-slug loads.

When first brought out, the Model

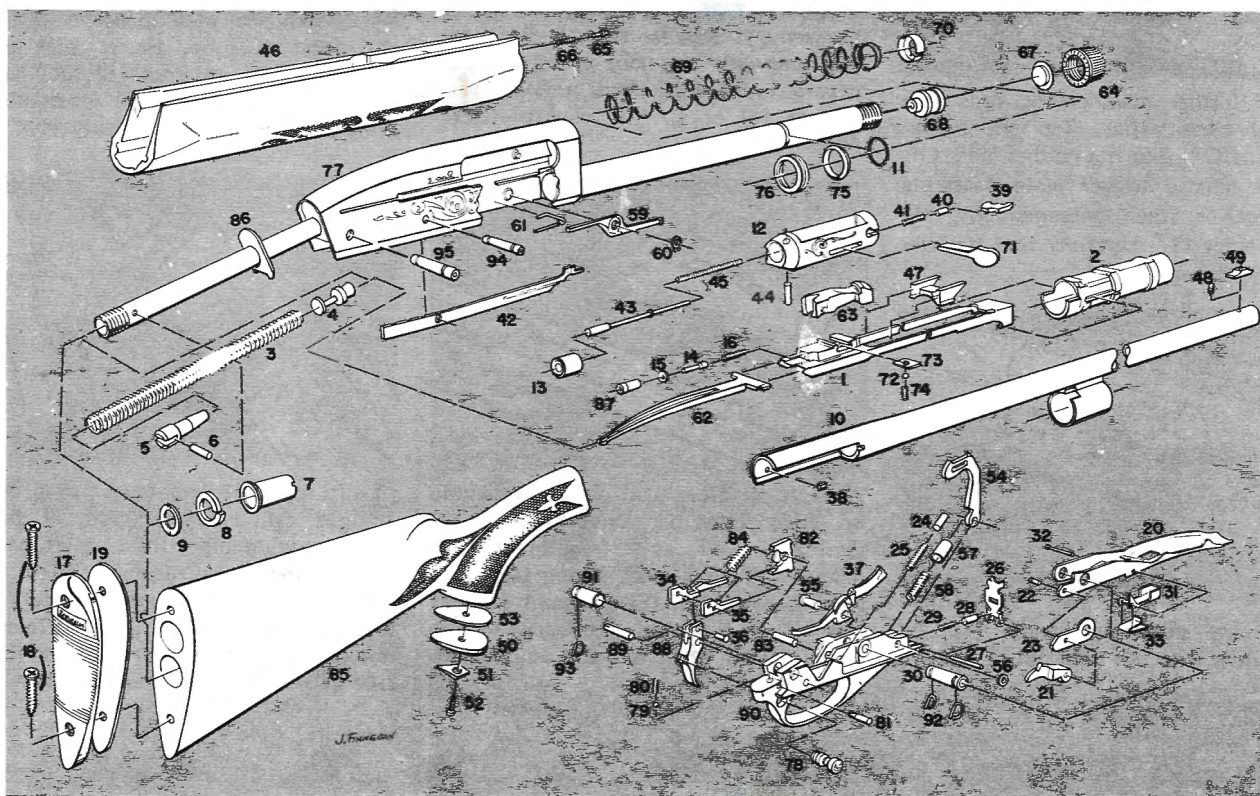
1100 was offered in 12-ga. 2 $\frac{3}{4}$ " and 12-ga. three-inch Magnum only. Later, it also became available in 16-, 20-, and 28-ga. 2 $\frac{3}{4}$ ", 20-ga. three-inch Magnum, and .410 bore 2 $\frac{1}{2}$ " and three-inch. Interchangeable barrels with various chokes and lengths (25" only for 28-ga. and .410 bore are available. A ventilated rib is standard on trap and skeet versions, and can be furnished on field guns at extra cost.

Gas for operating the action is vented

through two orifices in the barrel and impinges on a ring-shaped piston encircling the magazine tube. The piston drives back the action bar sleeve, action bar, and breechbolt. This compresses the action spring which drives the parts back into battery. The functioning cycle is smooth and fast, and the felt recoil is minimized. Also, the gun is not sensitive to operating pressure, and various loads from light to heavy can be fired without adjustment.

## Parts Legend

- |  |                                 |                                |  |
|--|---------------------------------|--------------------------------|--|
| 1. Action bar                                | 23. Carrier dog washer          | 48. Front sight                | 73. Operating handle plunger                   |
| 2. Action bar sleeve                         | 24. Carrier dog follower        | 49. Front sight base           | 74. Operating handle spring                    |
| 3. Action spring                             | 25. Carrier dog follower spring | 50. Grip cap                   | 75. Piston                                     |
| 4. Action spring follower                    | 26. Carrier latch               | 51. Grip cap inlay             | 76. Piston seal                                |
| 5. Action spring plug                        | 27. Carrier latch pin           | 52. Grip cap screw             | 77. Receiver assembly                          |
| 6. Action spring plug pin                    | 28. Carrier latch follower      | 53. Grip cap spacer            | 78. Safety                                     |
| 7. Action spring tube nut                    | 29. Carrier latch spring        | 54. Hammer                     | 79. Safety detent ball                         |
| 8. Action spring tube nut lock washer        | 30. Carrier pivot tube          | 55. Hammer pin                 | 80. Safety spring                              |
| 9. Action spring tube nut washer             | 31. Carrier release             | 56. Hammer pin washer          | 81. Safety spring retaining pin                |
| 10. Barrel                                   | 32. Carrier release pin         | 57. Hammer plunger             | 82. Sear                                       |
| 11. Barrel seal                              | 33. Carrier release spring      | 58. Hammer spring              | 83. Sear pin                                   |
| 12. Breechbolt                               | 34. Connector, left             | 59. Interceptor latch          | 84. Sear spring                                |
| 13. Breechbolt buffer                        | 35. Connector, right            | 60. Interceptor latch retainer | 85. Stock                                      |
| 14. Breechbolt return plunger                | 36. Connector pin               | 61. Interceptor latch spring   | 86. Stock bearing plate                        |
| 15. Breechbolt return plunger retaining ring | 37. Disconnector                | 62. Link                       | 87. Slide buffer                               |
| 16. Breechbolt return plunger spring         | 38. Ejector                     | 63. Locking block assembly     | 88. Trigger                                    |
| 17. Buttplate                                | 39. Extractor                   | 64. Magazine cap               | 89. Trigger pin                                |
| 18. Buttplate screw (2)                      | 40. Extractor plunger           | 65. Magazine cap detent        | 90. Trigger plate                              |
| 19. Buttplate spacer                         | 41. Extractor spring            | 66. Magazine cap detent spring | 91. Trigger plate pin bushing                  |
| 20. Carrier                                  | 42. Feed latch                  | 67. Magazine cap plug          | 92. Trigger plate pin detent spring, front (2) |
| 21. Carrier dog                              | 43. Firing pin                  | 68. Magazine follower          | 93. Trigger plate pin detent spring, rear      |
| 22. Carrier dog pin                          | 44. Firing pin retaining pin    | 69. Magazine spring            | 94. Trigger plate pin, front                   |
|  | 45. Firing pin retractor spring | 70. Magazine spring retainer   | 95. Trigger plate pin, rear                    |
|  | 46. Fore-end                    | 71. Operating handle           |  |
|  | 47. Fore-end support assembly   | 72. Operating handle plunger   |  |





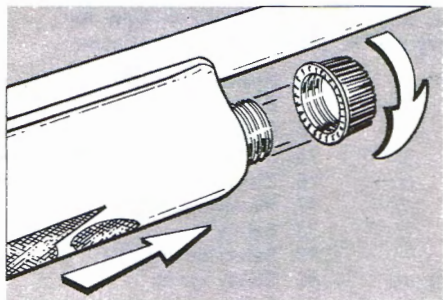
These are among several favorable features of gas-operated arms.

Magazine capacity in most versions is four shells. However, a plug furnished as an accessory can be installed in the magazine to reduce total capacity of the gun to three shots as required by Federal Migratory Bird Regulations.

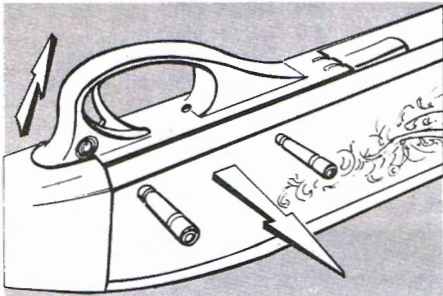
Most metal parts of the Model 1100 are steel with a high-luster blue finish on exposed surfaces. The well-proportioned stock and large hand-filling fore-end are mostly American walnut with Du Pont RK-W gloss finish noted for

its durability. Impressed checkering on the pistol grip and fore-end is in a fleur-de-lis pattern, and the receiver sides and breechbolt are decorated with scroll-type roll engraving. The butt-plate and grip cap are black plastic set off by white-line spacers. There are also versions fitted with a recoil pad.

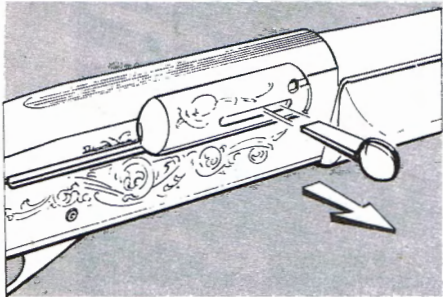
Well-designed, reliable, and possessing excellent handling qualities, the Model 1100 is the world's most popular gas-operated autoloading shotgun.



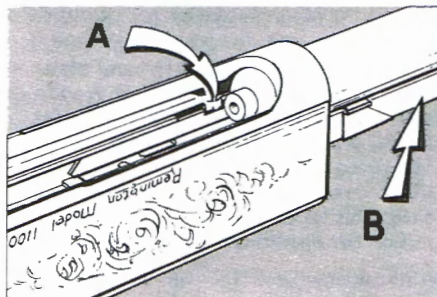
**1** To field-strip for routine cleaning and lubrication, engage safety (78) on safe, and unload gun. Unscrew and remove magazine cap (64). Slide fore-end (46) forward and remove. Pull barrel (10) forward from receiver (77).



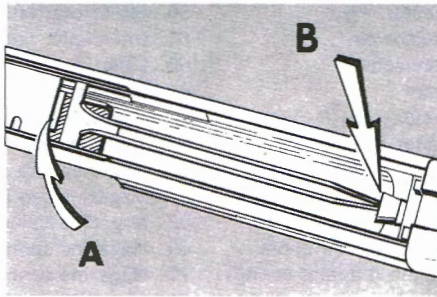
**2** For further disassembly, cock gun and close action. Tap out trigger plate pins (94) (95) from either side. Lift up and remove trigger plate assembly from receiver. When reassembling, guide disconnecter (37) carefully into receiver to avoid damage.



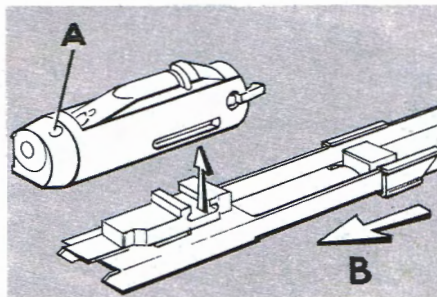
**3** Remove operating handle (71) by pulling it to the right out of breechbolt (12).



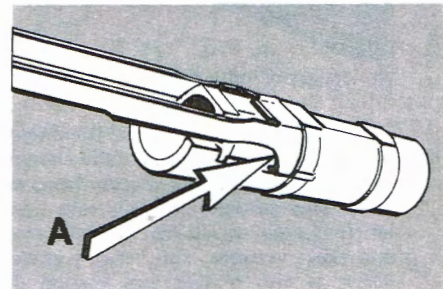
**4** Remove barrel seal (11), piston (75), and piston seal (76). With action fully forward, depress feed latch (42) at A, and pull action bar (1) at B with breechbolt forward. Action bar sleeve (2), action bar, breechbolt with locking block (63) attached, and fore-end support (47) can now be disassembled from gun.



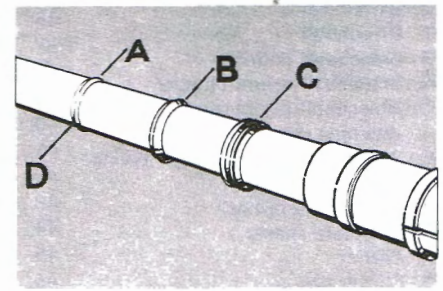
**5** Link (62) can be removed after action bar at A is moved forward for disassembly. Squeeze sides of link lightly at rear with long-nose pliers, and pull forward to separate from action spring follower (4) at B. Tilt slightly to remove from gun.



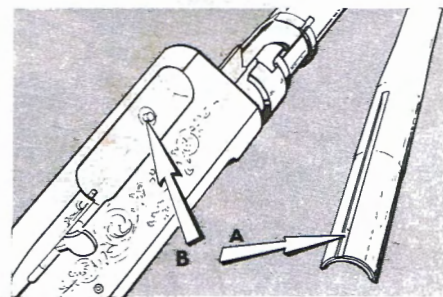
**6** Lift up breechbolt and disassemble from action bar. Drive firing pin retaining pin (44) at A from breechbolt, remove firing pin (43), spring (45), and locking block. NOTE: Fore-end support assembly at B should slide easily to rear of action bar when fore-end is reassembled on gun.



**7** Action bar can be disassembled from action bar sleeve after removing action bar from receiver. Insert small tool under lip of bar at A. Pry up until bar disassembles from sleeve. Snap down on bar to reassemble on sleeve. In reassembly, guide breechbolt and action bar carefully in receiver until contact is made with feed latch. Depress feed latch; then, continue pushing breechbolt into receiver. Release latch, and make certain that rear of action bar aligns properly with front of link.



**8** Barrel seal at A, piston at B, and piston seal at C in proper position on magazine tube. Barrel seal must position easily in recess of tube at D. Open action slightly when reassembling seals and piston on magazine tube.



**9** To replace barrel, open action. Align gas cylinder on middle of barrel over magazine tube; then, insert breech end of barrel in receiver. Align long slot at A on barrel with barrel lock (stud) at B in receiver. Slide barrel fully into receiver. Replace fore-end and magazine cap. Screw cap down tightly. ■



BY F. G. HART

# The Remington 3200

THE Remington Model 3200 shotgun was introduced in 1973. It generally resembles the Model 32, an earlier Remington over-under made from 1932 until 1942. Both models have a separated barrel construction and are bolted by a sliding top lock.

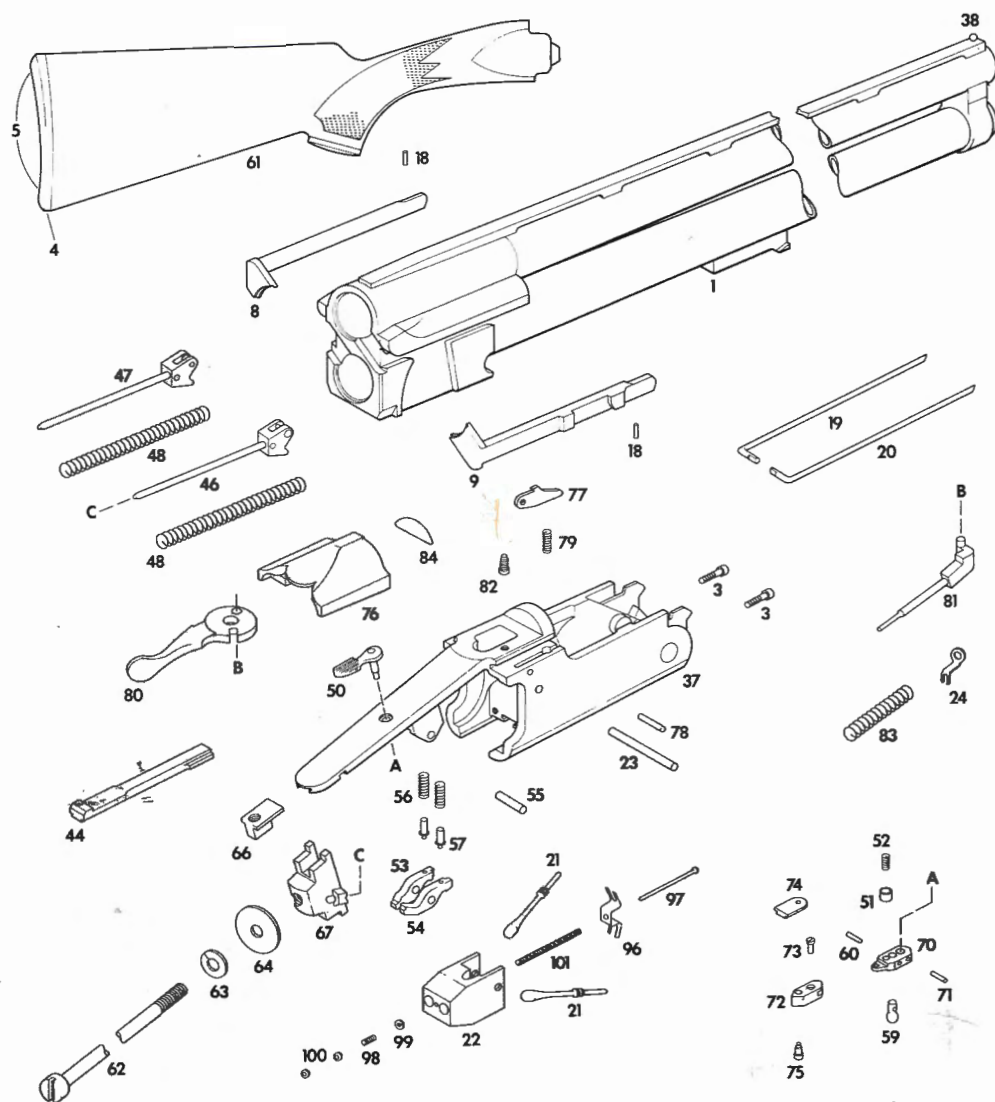
Offered in 12-ga. only, the Model 3200 has a mechanically operated single trigger and selective ejectors. The thumb operated tang safety is pivoted from side to side rather than the more usual back and forth sliding movement. Swinging it left or right selects which barrel is fired first. The barrels are assembled to a monobloc which has large lugs on each side. These lugs engage shoulders in the frame to prevent the thrust of recoil from being transmitted to the hinge pin. In guns of early production the tang was assembled to the frame by a pin, and the front and rear fore-end screws were identical. These and other details have been modified to the construction shown here.

The Model 3200 has been made in a number of special editions as well as the regular Field, Trap and Skeet versions. Its very fast lock time of around 1.6 milliseconds makes it popular among clay target shooters.

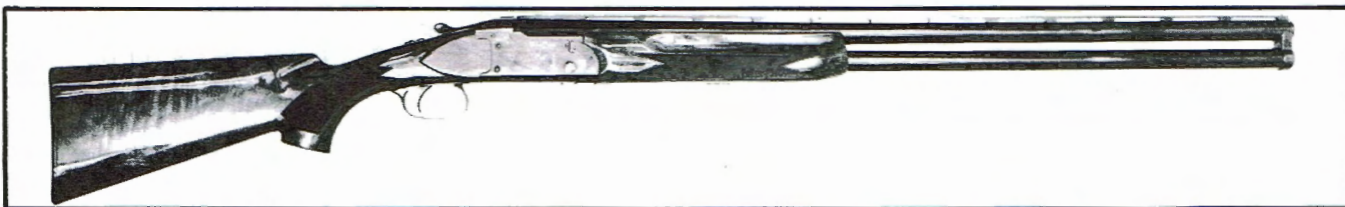
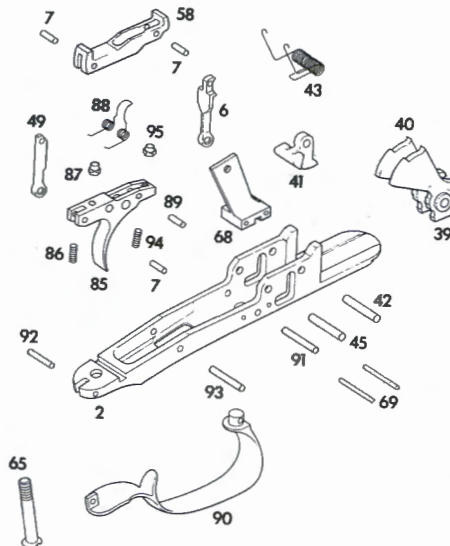
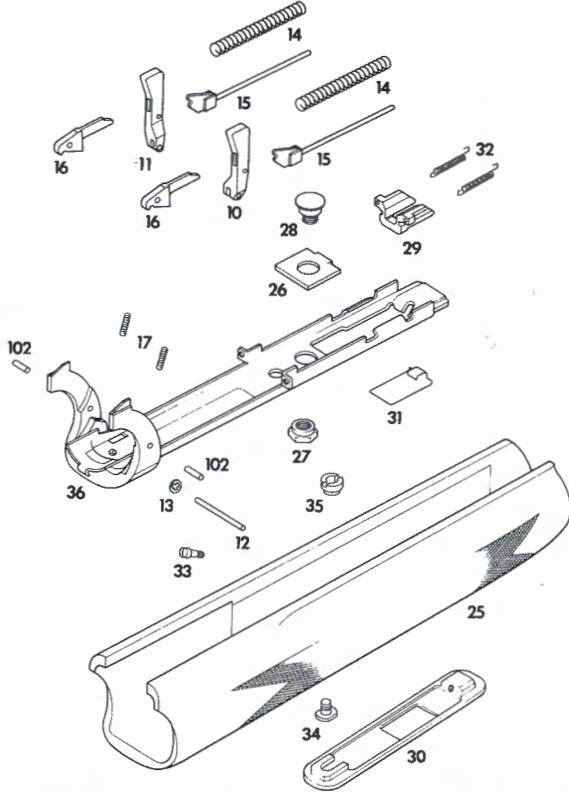
## EXPLODED VIEWS:

### Parts Legend

- 1 Barrel assembly
- 2 Bottom Tang
- 3 Bottom Tang screw (2)
- 4 Butt plate
- 5 Butt plate screw (2)
- 6 Connector
- 7 Connector pin
- 8 Ejector, left
- 9 Ejector, right
- 10 Ejector hammer, right
- 11 Ejector hammer, left
- 12 Ejector hammer pin
- 13 Ejector hammer pivot ring
- 14 Ejector hammer spring (2)
- 15 Ejector Plunger assembly (2)
- 16 Ejector sear (2)
- 17 Ejector sear spring (2)
- 18 Ejector stop pin (2)
- 19 Ejector trip rod, left
- 20 Ejector trip rod, right
- 21 Firing pin (2)
- 22 Firing pin housing
- 23 Firing pin housing assembly pin
- 24 Firing pin retractor
- 25 Fore-end
- 26 Fore-end adjuster plate
- 27 Fore-end adjuster plate lock nut
- 28 Fore-end adjuster plate stud
- 29 Fore-end latch
- 30 Fore-end latch cover
- 31 Fore-end latch finger piece
- 32 Fore-end latch spring (2)
- 33 Fore-end screw, front
- 34 Fore-end screw, rear
- 35 Fore-end screw nut
- 36 Fore-end iron
- 37 Frame
- 38 Front sight
- 39 Hammer, right
- 40 Hammer, left
- 41 Hammer cocking cam
- 42 Hammer cocking cam pin
- 43 Hammer cocking cam spring
- 44 Hammer cocking rod
- 45 Hammer pin
- 46 Hammer plunger, right
- 47 Hammer plunger, left
- 48 Hammer spring (2)
- 49 Rear connector link
- 50 Safety selector assembly
- 51 Safety selector detent
- 52 Safety selector detent spring
- 53 Sear, left
- 54 Sear, right
- 55 Sear pin
- 56 Sear spring (2)
- 57 Sear spring plunger (2)
- 58 Selector block
- 59 Selector block guide
- 60 Selector block guide pin
- 61 Stock
- 62 Stock bolt
- 63 Stock bolt lock washer
- 64 Stock bolt washer
- 65 Tang block screw
- 66 Tang block slot nut
- 67 Tang connecting block
- 68 Tang strut
- 69 Tang strut pin (2)
- 70 Toggle block







- 71 Toggle block retaining pin
- 72 Toggle link
- 73 Toggle link screw
- 74 Toggle slide block
- 75 Toggle slide block stud
- 76 Top lock
- 77 Top lock latch
- 78 Top lock latch pin
- 79 Top lock latch spring
- 80 Top lock lever
- 81 Top lock lever plunger

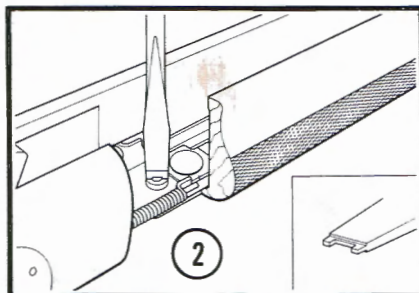
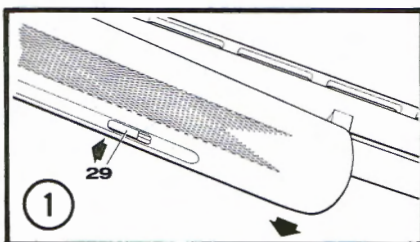
- 82 Top lock lever screw
- 83 Top lock lever spring
- 84 Top lock shim
- 85 Trigger
- 86 Trigger adjusting screw
- 87 Trigger adjusting screw nut
- 88 Trigger connector spring
- 89 Trigger connector spring pin
- 90 Trigger guard
- 91 Trigger guard pin, front

- 92 Trigger guard pin, rear
- 93 Trigger pin
- 94 Trigger stop screw
- 95 Trigger stop screw nut
- 96 Yoke
- 97 Yoke rod
- 98 Yoke rod buffer spring
- 99 Yoke rod buffer spring washer
- 100 Yoke rod nut (2)
- 101 Yoke rod spring

- 102 Ejector sear pin (2)

• These parts are manufactured to close tolerances and selectively assembled at the factory to assure proper function. Should any require service or replacement, the gun must be returned to the factory.

1. Make sure gun is unloaded. Close action, push fore-end latch (29) rearward and rotate fore-end downward slightly to disengage from barrel assembly (1). Pull forward and away from gun. Open action and rotate barrel assembly downward as far as possible. Move assembly rearward slightly to disengage from pivot pins in frame (37) and remove.



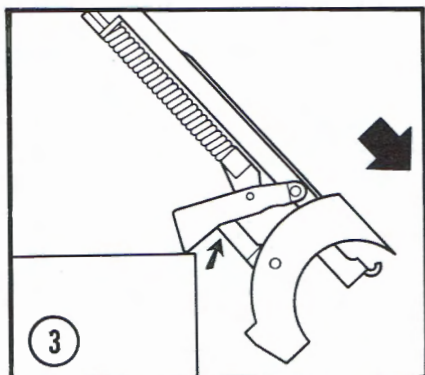
2. Unscrew fore-end screw nut (35), using altered screwdriver as shown, and front fore-end screw (33). Pull fore-end latch cover (30) and rear fore-end screw (34) from fore-end (25). Slide fore-end iron assembly unit from fore-end. Remove buttplate (4) and unscrew

stock bolt (62). Further disassembly is not required for normal cleaning and lubrication.

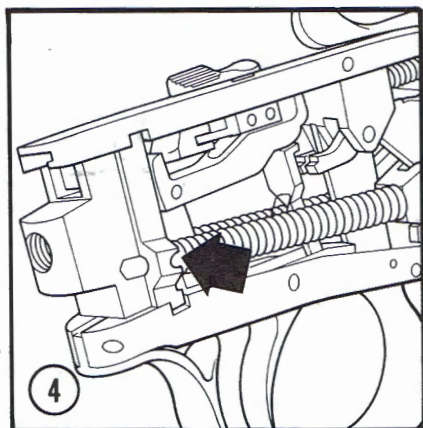
3. To take fore-end iron assembly apart, hook point of ejector hammers (10) and (11) on edge of bench, press ejector sears (16) downward and ease ejector hammers rearward. Grasp ejector plunger blocks forward of ejector hammers with long nosed pliers and pry free from engagement with pins in ejector hammers. Remove ejector plunger assemblies (15) and ejector hammer springs (14). Drive out ejector hammer pin (12) from right to left and remove ejector hammers and pivot ring (13). Remove ejector sears and springs (17). Press fore-end latch finger piece (31) forward to



disassemble from fore-end latch (29). Unscrew and remove fore-end adjuster plate lock nut (27), stud (28) and fore-end adjuster plate (26). Disengage fore-end latch springs (32) from front of fore-end iron (36). Slide fore-end latch rearward and out and disengage springs from latch.

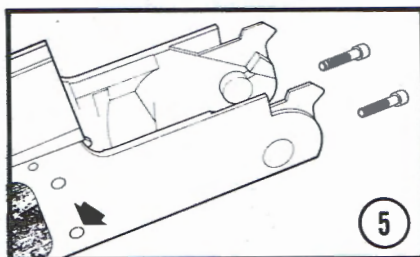


4. Insert 1/16" diameter pin to a depth of 1/4" into small hole (arrow) in tang connecting block (67). Depress top lock latch (77) to release top lock (76). Pull trigger twice to fire hammers, rotate hammers forward and remove right and left hammer plunger assembly units. CAUTION: Do not disturb small pin at rear of assembly. Disassembly of these units is not necessary except for replacement of parts. Hammer springs (48) are under high compression and must be prevented from flying free when pins are removed from hammer plunger rods. Drive out front and rear trigger guard pins (91) and (92) and remove trigger guard (90). Rotate hammers to rear (cocked) position. Push right and left ejector trip rods (20) and (19) forward as far as possible, rotate bend ends upward through slots and remove. Unscrew tang block screw (65). Remove tang block slot nut (66) and tang connecting block.

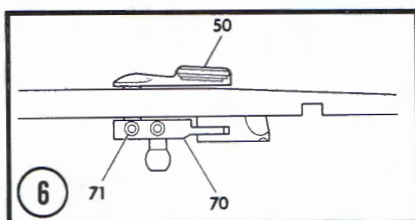


5. Unscrew bottom tang screws (3) or drive out assembly pin (arrow). DO NOT attempt to remove the filler pins found in early guns modified by

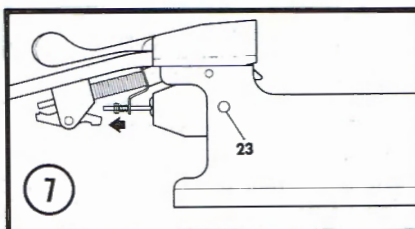
the factory. Drive out sear pin (55) and remove right and left sears (54) and (53), sear spring plungers (57) and sear springs (56). Hold selector block (58) rearward, grasp bottom tang assembly unit and pull rearward and out of frame. Remove hammer cocking rod (44). Drive out trigger pin and remove trigger assembly unit. Disassembly of this unit is seldom necessary and should not be attempted except by a qualified gunsmith. Drive out hammer pin (45) and remove right and left hammers (39) and (40). Drive out hammer cocking cam pin (42) and remove hammer cocking cam (41) and spring (43). Disassembly of tang strut (68) is not necessary.



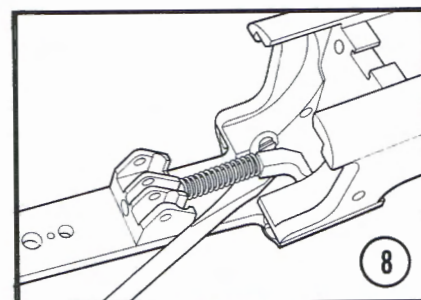
6. To disassemble safety, provide support beneath side of toggle block (70) and drive out toggle block retaining pin (71) from left to right. Drive safety selector assembly (50) from toggle block. CAUTION: Safety selector detent (51), located between toggle block and top tang, is under compressed load of safety selector detent spring (52). Carefully slide remaining assembly from top tang.



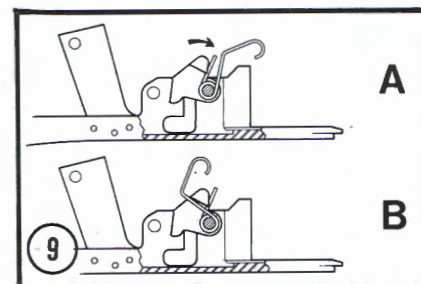
7. With top lock latched in rear position, drive out firing pin housing assembly pin (23). Grasp yoke rod (97) and retract and hold as far rearward as possible and pull firing pin housing assembly unit from frame. Unscrew yoke rod nuts (100) and remove firing pins (21), yoke (96), yoke rod buffer spring (98), washer (99), yoke rod and yoke rod spring (101).



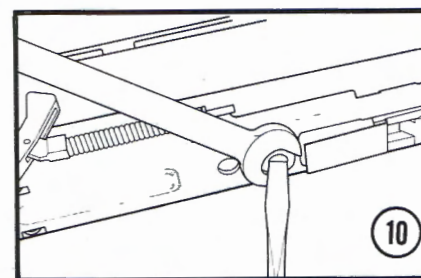
8. Release top lock lever to forward position. Using small screwdriver, pry stud on top lock lever plunger (81) from hole in top lock lever. Unscrew top lock lever screw (82). Depress top lock latch (77) and pull top lock and lever from frame. Remove top lock shim (84). Lift top lock latch spring (79) from frame. Drive out top lock latch pin (78) and remove latch. Pull top lock lever plunger, spring (83) and firing pin retractor (24) from top of frame.



9. Reassemble gun in reverse order. Adjust top lock lever plunger so stud drops into hole in top lock lever. When reassembling firing pin housing assembly, grooves in firing pins must engage slots in yoke. When top lock is latched rearward, firing pins should be flush to breech. Replace hammer cocking cam by rotating slots clockwise until stopped by spring (A). Hook long ends of spring beneath ears on cam (B).



10. Wear between fore-end iron and frame is taken up by adjusting the fore-end adjuster plate. Remove fore-end and fore-end iron assembly. Replace fore-end iron assembly on gun. Loosen fore-end adjuster plate lock nut and rotate stud to right or left until desired tightness is obtained when action is opened. Hold stud in position, tighten lock nut and reassemble.





# Exploded views:

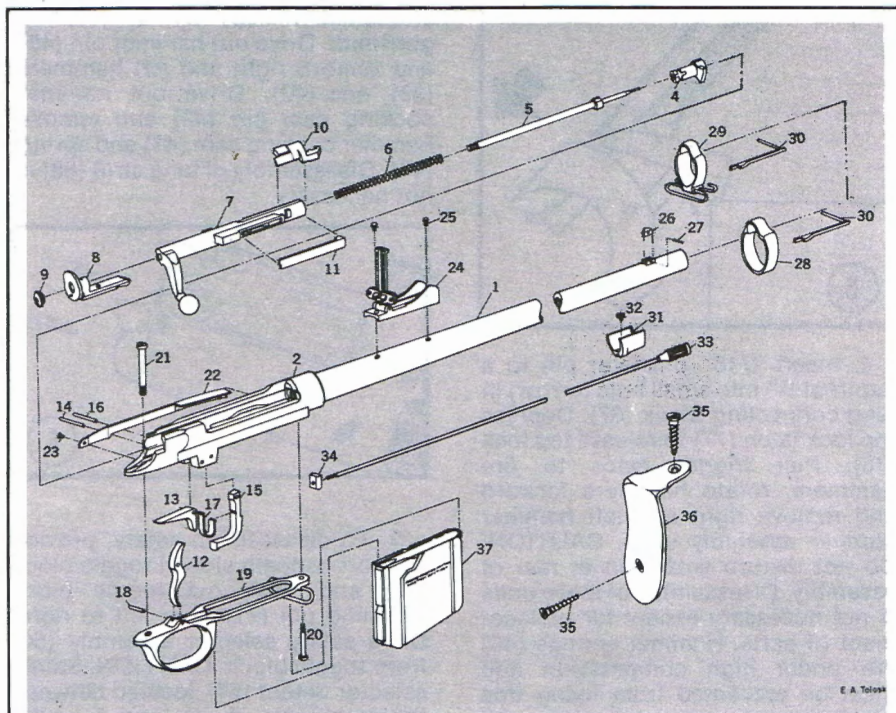
## Remington Model 1885 & 1899

**J**AMES PARIS LEE, born in Scotland, Aug. 9, 1831, began this design in 1877 at the Remington Armory, Ilion, N.Y. The patent granted Nov. 4, 1879, was assigned to Remington. In 1882, Remington submitted to the United States Army Ordnance Board two models of the Remington Lee rifle, the Model 1879 and an improved version which became the Model 1885. Remington was awarded a limited contract for Model 1885 rifles by the Navy Department. They are marked on the top of the receiver ring with U.S.N. over an anchor. The exact quantity delivered is unknown. Efforts to interest the military in the smokeless powder Model 1899 proved fruitless. Remington then tried the commercial market by introducing this system in the form of target and sporting rifles.

Though similar in appearance, the Models 1885 and 1899 are different in nearly every detail. Except for small screws and pins, none of the parts are interchangeable.

Both rifles are cocked by the forward action of the bolt and closing. To engage the safety, grasp the cocking piece with your left hand, press the trigger and slowly allow the cocking piece to move forward until it engages the safety notch. To release from safe, simply pull back the cocking piece. When the safety is engaged, the bolt is locked in the closed position. The detachable box magazine has a capacity of five rounds and is removed by pressing the magazine catch located in the top of the trigger bow. When the magazine is removed, the magazine cutoff moves inward to block the cutout for the magazine. The rifle can then be loaded and used as a single shot.

Remington discontinued production of the Model 1899 in 1901. In the meantime, Lee had regained his patent rights and proceeded to stimulate interest in this rifle abroad. England adopted his design,



### Model 1885

- |                          |                                    |                                      |  |
|--------------------------|------------------------------------|--------------------------------------|--|
| 1. Barrel                | 12. Trigger                        | 22. Magazine Cutoff Spring           | 30. Band Retaining Springs (2)                 |
| 2. Receiver              | 13. Sear                           | 23. Screw, Magazine Cutoff Spring    | 31. Nose Cap, Stock                            |
| 3. Stock (not shown)     | 14. Sear Pin                       | 24. Rear Sight                       | 32. Screw, Nose Cap                            |
| 4. Bolt Head             | 15. Magazine Catch                 | 25. Screws, Rear Sight (2)           | 33. Ram Rod                                    |
| 5. Striker               | 16. Magazine Catch Pin             | 26. Front Sight                      | 34. Retaining Nut, Ram Rod, press fit in stock |
| 6. Mainspring            | 17. Sear and Magazine Catch Spring | 27. Pin, Front Sight                 | 35. Buttplate                                  |
| 7. Bolt                  | 18. Trigger Pin                    | 28. Middle Band                      | 36. Screws, Buttplate (2)                      |
| 8. Cocking Piece         | 19. Trigger Guard                  | 29. Front Band with Sling Swivel and | 37. Magazine Assembly                          |
| 9. Striker Retaining Nut | 20. Front Screw, Trigger Guard     |                                      |  |
| 10. Extractor            | 21. Tang Screw,                    |                                      |  |
| 11. Extractor Locking    |                                    |                                      |  |

known as the Lee-Enfield, which became the mainstay of the British military. ■

### Disassembly Procedure—Model 1885

Remove magazine assembly by depressing magazine catch. Lift bolt handle and slide bolt rearward approximately 1". Insert

a screwdriver in the slot between the extractor locking spring and the front face of the bolt lug (see figure A). Rotate blade of screwdriver counter-clockwise to force the extractor locking spring forward. Lift out from bolt assembly. Remove extractor by lifting away from bolt (see figure B). Slide bolt rearward approximately half the distance of the opening in the receiver.

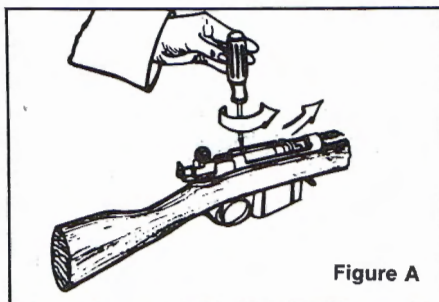


Figure A

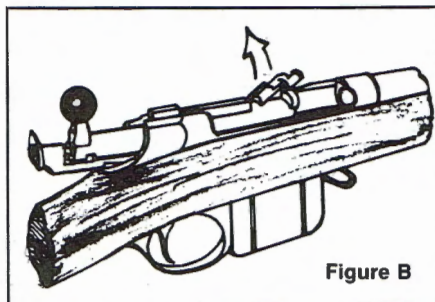


Figure B

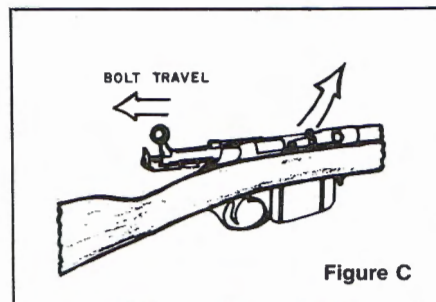
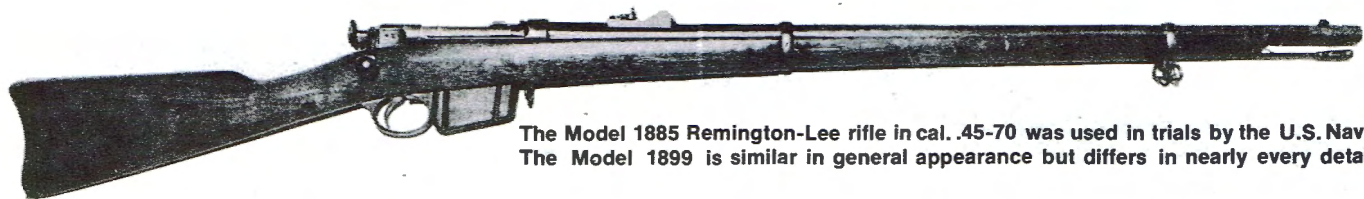


Figure C

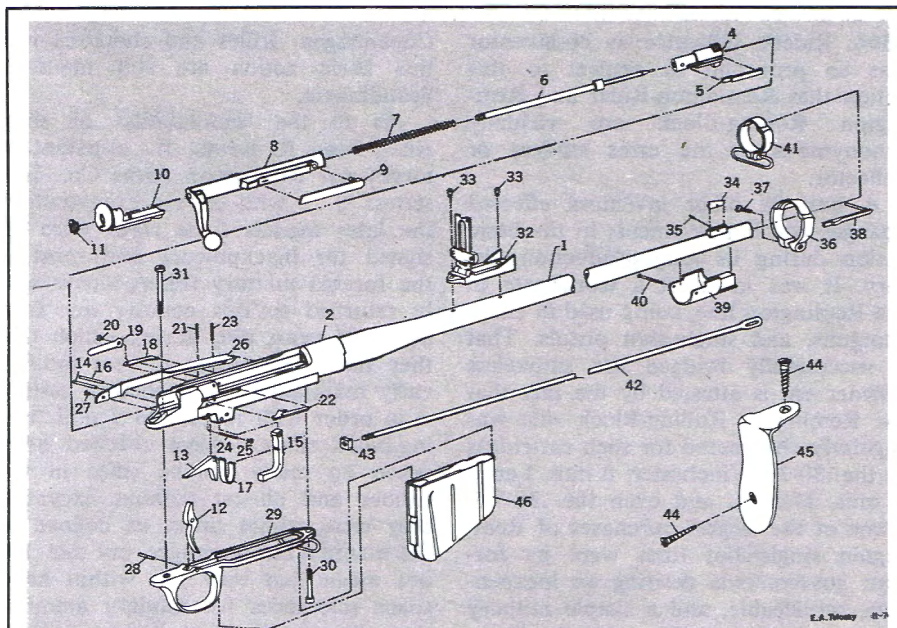




The Model 1885 Remington-Lee rifle in cal. .45-70 was used in trials by the U.S. Navy. The Model 1899 is similar in general appearance but differs in nearly every detail.

# Lee Magazine Rifles

BY EDWARD A. TOLOSKY



## Model 1899

- |                                 |                                    |                                   |  |
|---------------------------------|------------------------------------|-----------------------------------|--|
| 1. Barrel                       | 13. Sear                           | 26. Magazine Cutoff Spring        | Band   |
| 2. Receiver                     | 14. Sear Pin                       | 27. Screw, Magazine Cutoff Spring | 38. Band Retaining Spring                        |
| 3. Stock (not shown)            | 15. Magazine Catch                 | 28. Trigger Pin                   | 39. Nose Cap and Bayonet Stud                    |
| 3a. Upper Hand Guard            | 16. Magazine Catch Pin             | 29. Trigger Guard                 | 40. Screw, Nose Cap-Bayonet Stud                 |
| 4. Bolt Head                    | 17. Sear and Magazine Catch Spring | 30. Front Screw, Trigger Guard    | 41. Front Band with Sling Swivel                 |
| 5. Extractor                    | 18. Ejector, Cartridge             | 31. Tang Screw, Receiver          | 42. Ram Rod                                      |
| 6. Striker                      | 19. Ejector Spring                 | 32. Rear Sight                    | 43. Retaining Nut, Ram Rod, press fit into stock |
| 7. Mainspring                   | 20. Screw, Ejector Spring          | 33. Screws, Rear Sight (2)        | 44. Screws, Buttplate(2)                         |
| 8. Bolt                         | 21. Pin, Ejector                   | 34. Front Sight                   | 45. Buttplate                                    |
| 9. Locking Lever, Bolt Assembly | 22. Bolt Stop                      | 35. Front Sight Pin               | 46. Magazine Assembly                            |
| 10. Cocking Piece               | 23. Pin, Bolt Stop                 | 36. Middle Band                   |  |
| 11. Striker Retaining Nut       | 24. Pin, Indexing, Bolt Stop       | 37. Screw, Middle                 |  |
| 12. Trigger                     | 25. Retaining Screw, Indexing Pin  |                                   |  |

Rotate bolt head 60° counterclockwise and slide out from bolt (see figure C). Remove bolt assembly from receiver.

## Disassembly Procedure—Model 1899

Remove magazine assembly by depressing magazine catch. Lift bolt handle and slide bolt rearward approximately one-half

the distance of travel. Raise the locking lever slightly (Caution: DO NOT raise more than a 1/32" or the part will snap), and rotate counterclockwise 90° (see figure D). Remove from bolt. Slide bolt rearward and remove from receiver. Bolt head will be engaged by the bolt stop and remains in the receiver. Slide bolt head forward and lift out of receiver.

## Disassembly Common to Both Models

To disassemble bolt, place it on a flat surface, preferably a wood block. This eliminates the possibility of damage to the striker. Grasping the bolt body and handle, push down, unscrew striker retaining nut, and slowly relieve tension on the mainspring (see figure E). Remove cocking piece, striker and mainspring from bolt.

Remove ramrod from stock channel, using a small adjustable open-end wrench. Loosen the hex-head screw on the front band (M1899 only) and remove nose cap screw. Tap nose cap and front band from stock. Loosen middle band screw and depress band spring, then slide off middle band. Remove upper hand guard (M1899 only). Remove tang screw and trigger guard screw. Lift out barrel and receiver assembly and lightly tap stock with a rubber mallet to remove trigger guard.

To disassemble trigger guard, drive out trigger pin and lift out trigger. Then drive out sear pin and remove sear. Sear and magazine catch spring will drop out. Drive out magazine catch pin and lift out magazine catch. Remove ejector screw and ejector spring. Drive out ejector pin and lift out magazine cutoff spring. Remove bolt stop retaining screw and indexing pin; drive out bolt stop pin and remove bolt stop.

Do not attempt to disassemble the magazine assembly. Other disassembly is readily apparent.

Reassemble rifle in the reverse order. When reassembling the magazine catch and sear, it is important to maintain the relationship of the sear and the magazine catch spring with respect to the indexing notches on the sear and magazine catch (see figure F). Misalignment of this spring may cause it to crack or block the installation of the trigger guard. If resistance is encountered, gently tap the trigger guard assembly in position. When assembling the trigger to the trigger guard, locate the notch on the trigger above the cutout in the trigger guard.

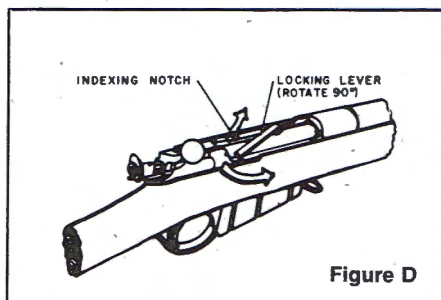


Figure D

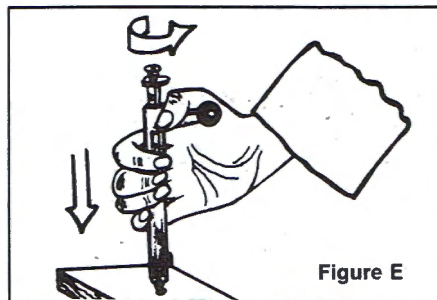


Figure E

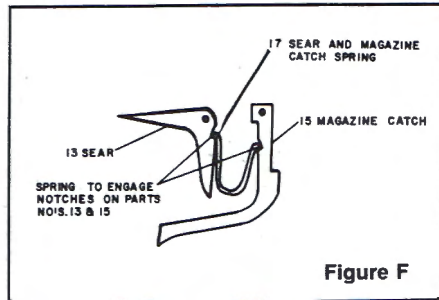


Figure F





# Remington

## Rolling-Block Rifle

By James M. Triggs

ON Jan. 27, 1863, U. S. patent No. 37,501 was granted to Leonard Geiger covering a hinged or 'split-breech' gun action. That this basic action, with many subsequent improvements, remained in production through the 1930's is remarkable.

The first arms made under the Geiger patent were 20,000 carbines chambered for the .56-50 Spencer rim-fire cartridge. Delivered in 1865, these carbines were purchased by the U. S. Government under a contract granted to E. Remington & Sons of Ilion, N. Y. At the time this contract was granted, Remington production facilities were so involved with other government commitments that the carbines were actually manufactured by the Savage Revolving Fire Arms Co., of Middletown, Conn., under Remington license and with Remington-designed machinery.

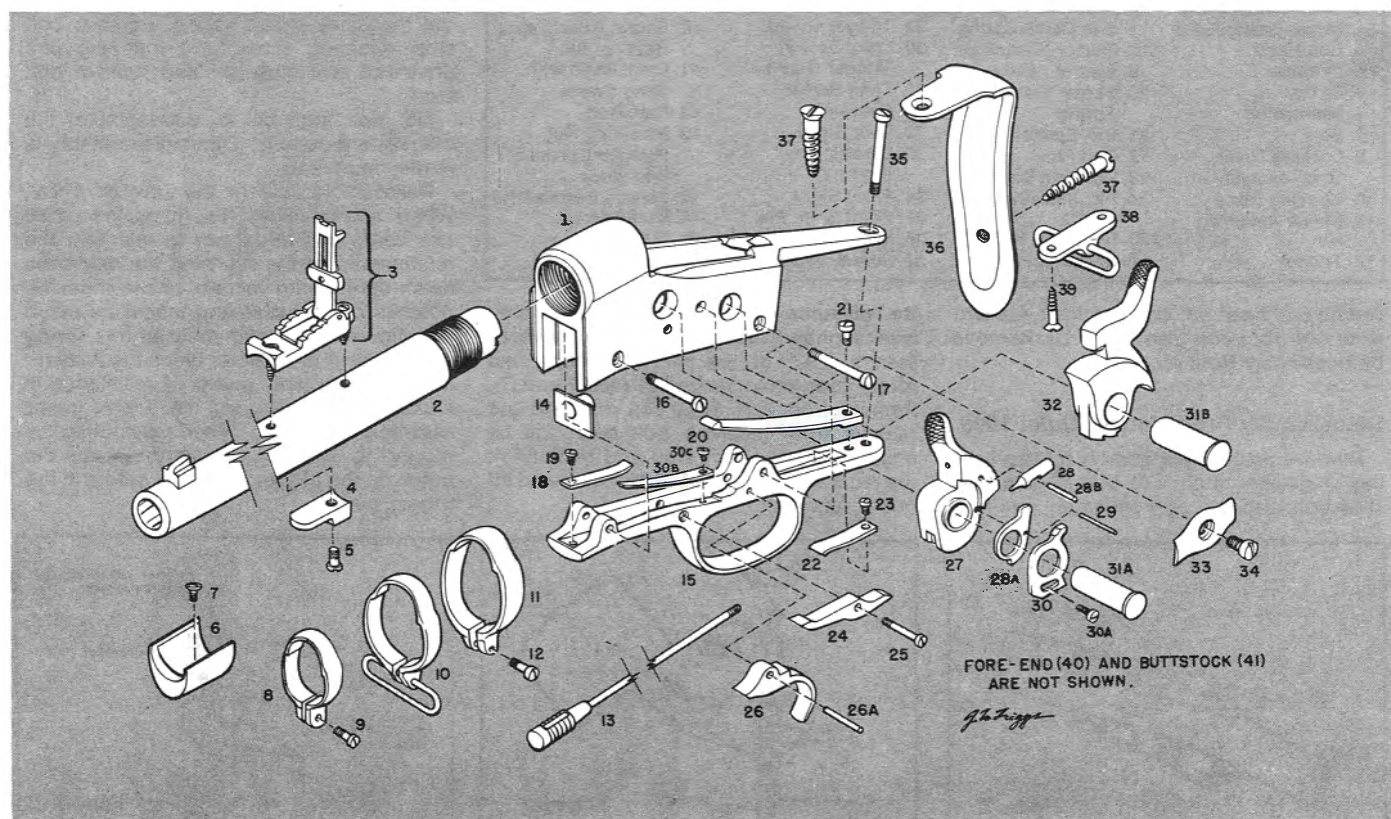
The original Geiger action was substantially improved by Remington employee Joseph Rider. His initial patent No. 45,123 was granted on Nov. 15,

1864. Rider's influence as co-inventor was so profound in respect to this action that Remington-Rider and Remington Rolling-Block are virtually synonymous to the arms student or collector.

A host of other inventors effected changes and improvements in the basic action during its long production history. It was in effect a workhorse in the Remington line, being used in rifles, shotguns, and single-shot pistols. That it successfully bridged the smokeless powder era is attested by the fact that the Remington Rolling-Block rifle was regularly chambered for such cartridges as the .30-30 Winchester, 8 mm. Lebel, 7 mm. Mauser, and even the .30-'06. Some of the largest purchases of Remington single-shot rifles were by foreign governments desiring an inexpensive, serviceable, and a simple military weapon. Military rifles with the Remington-Rider action were made at Springfield Armory and by Denmark in the Danish government arsenal in

Copenhagen. Rifles and shotguns with this basic action are still made in Scandinavia.

As to the 'shootability' of these rifles, John R. Lewis, Jr., a patent attorney for Remington Arms Co., Inc., states: "... with certain exceptions in the later models these rifles were designed for blackpowder and most of the foreign military rolling-blocks lately returned to this country are from 50 to 85 years old; during which time they have been more or less indifferently maintained. A particular caution is in order with respect to 7 mm. rolling-block rifles. I have checked head-space on many of the rifles in this caliber and almost without exception they were within limits as defined by the manufacturing gauges, but this does not mean that they are within head-space tolerances for modern ammunition. Apparently these 7 mm. military rolling-block rifles were manufactured to use some now obsolete military cartridge with longer head-to-shoulder





dimensions than the 7 mm. sporting cartridge standardized by SAAMI (Sporting Arms & Ammunition Manufacturers Institute) about 1920.

"Since the modern 7 mm. sporting cartridge requires the same headspace as the .257 Remington-Roberts, either a modern 7 mm. or the .257 Remington-Roberts gauge may be used to check a rifle. It will be found that it is a rare 7 mm. military rolling-block rifle which does not have grossly excessive headspace for modern 7 mm. ammunition. In firing such rifles with suitable precautions I have not encountered any head separations but almost invariably modern cartridges fired in these rifles show on the wall of the case about  $\frac{3}{8}$ " forward of the head the

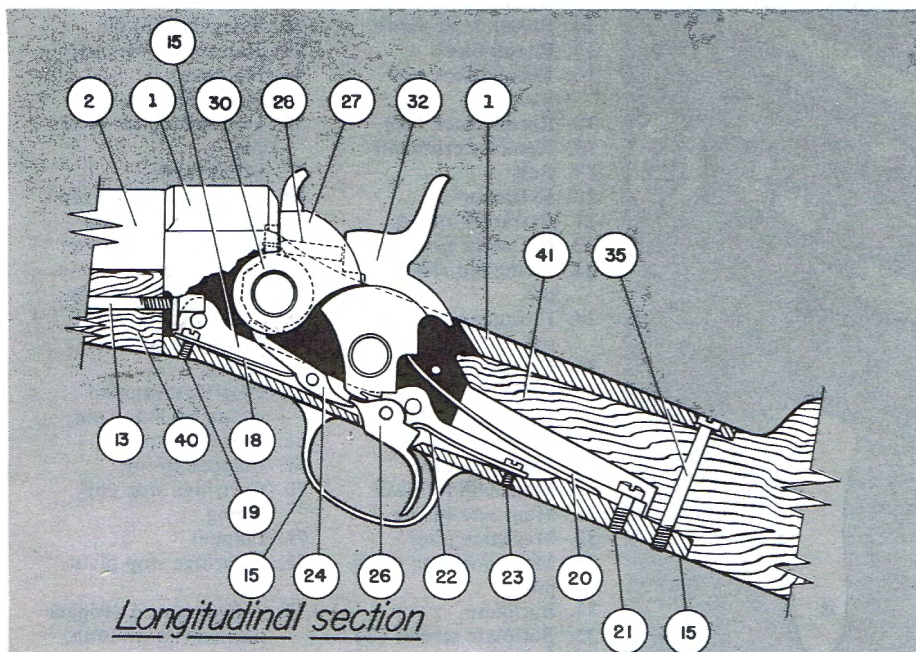
bright ring or strained brass which is characteristic of an incipient head separation. This condition may be corrected by setting the barrel back one turn on the threads and rechambering, but this operation is difficult because of the nature of the clearance cut required for the extractor.

"Rolling-block rifles are interesting curios but should not be seriously regarded as shooting rifles unless their use is limited strictly to fresh ammunition of characteristics consistent with the period of their original design and manufacture."

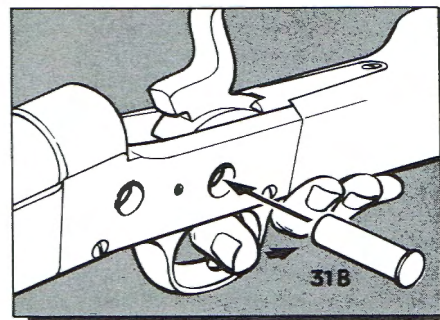
JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.

## Parts Legend

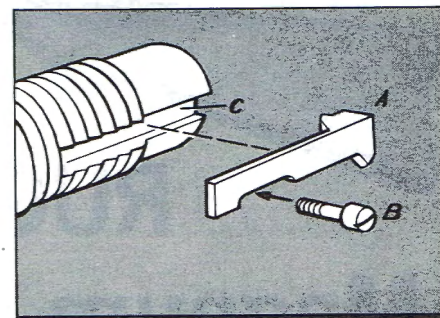
- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Receiver                 | 23. Trigger spring screw    |
| 2. Barrel                   | 24. Locking lever           |
| 3. Rear sight assembly      | 25. Locking lever screw     |
| 4. Recoil stud              | 26. Trigger                 |
| 5. Recoil stud screw        | 26A. Trigger pin            |
| 6. Stock tip                | 27. Breechblock             |
| 7. Stock tip screw          | 28. Firing pin              |
| 8. Front band               | 28A. Firing pin retractor   |
| 9. Front band screw         | 28B. Firing pin limit pin   |
| 10. Middle band & swivel    | 29. Retractor pin           |
| 11. Rear band               | 30. Extractor               |
| 12. Rear band screw         | 31A. Breechblock pin        |
| 13. Ramrod                  | 31B. Hammer pin             |
| 14. Ramrod stop             | 32. Hammer                  |
| 15. Guard plate             | 33. Button                  |
| 16. Front guard plate screw | 34. Button screw            |
| 17. Rear guard plate screw  | 35. Tang screw              |
| 18. Lever spring            | 36. Buttplate               |
| 19. Lever spring screw      | 37. Buttplate screws (2)    |
| 20. Mainspring              | 38. Stock swivel            |
| 21. Mainspring screw        | 39. Stock swivel screws (2) |
| 22. Trigger spring          |                             |



Interior parts of the rolling-block action are shown here in longitudinal-section to demonstrate their correct relative positions. Part numbers are keyed to part numbers in exploded view drawing



1 To replace hammer and breechblock in receiver, keep trigger pulled all the way back while inserting hammer with its nose forward in fired position as shown. Move hammer until its hole lines up with hammer pin holes in receiver. Slip hammer pin (31B) into hole in left of receiver, through hammer, and through hole in right of receiver. Cock hammer and replace breechblock and breechblock pin in like fashion



2 This shows type of extractor (A) used in Remington Rolling-Block Rifle, U. S. Navy Model of 1869. Extractor is held in place in the slot (C) in the barrel by screw (B) which passes through receiver from the left side. This model also has a firing pin spring and firing pin retaining screw in the hammer nose. Also, in this Navy Remington the mainspring is provided with an anti-friction roller at the hammer end and a different type of ramrod stop is employed. Disassembly procedure for all rolling-block rifles, with the exception of these few variations, remains the same

## Remington Rolling-Block Rifle

### DISASSEMBLY PROCEDURE

Loosen button screw (34) and remove button (33) from left side of receiver (1). Cock hammer (32) and push out breechblock pin (31A) from right to left. Lift out breechblock (27) with extractor (30) attached. Firing pin (28) can be removed from breechblock by drifting out firing pin retaining pin (29). Let hammer down all the way, remove hammer pin (31B) and lift hammer (32) out of receiver (1).

The wooden fore-end (not shown in exploded view) may be removed by withdrawing ramrod (13) and removing barrel bands (8, 10 & 11).

To remove buttstock (not shown in exploded view), take out tang screw (35) and pull buttstock off to rear. Remove front and rear guard plate screws (16 & 17) and drop guard plate (15) out of receiver (1). All parts and springs contained within the guard plate may be removed if necessary by withdrawing their respective screws and retaining pins.

The arm is reassembled in reverse order.



**T**HE Ruger carbine introduced in 1961 by Sturm, Ruger & Co., Inc., was the first factory-made shoulder arm to be chambered for the .44 Remington Magnum cartridge. Designed for hunting deer-class game within relatively short range, this gun is noteworthy for several design features.

It is gas-operated. When fired, powder gas, tapped through a small hole in the barrel, acts upon a floating short-stroke piston which strikes the front end of the slide, driving it to the rear to rotate and unlock the bolt, extract and eject the fired cartridge case, cock the hammer, and initially feed a fresh cartridge from the tubular magazine in the fore-

end. The energy of the compressed slide spring then forces the slide assembly forward to chamber the cartridge and rotate the bolt into locked position. This completes the firing cycle.

The tubular magazine holds 4 cartridges; with a cartridge in the chamber, capacity of the gun is 5 rounds.

The receiver is machined from a solid block of steel and is closed on top. It is drilled and tapped for commercial scope top mounts.

The 18½" barrel is button rifled and has 12 grooves with a twist rate of one turn in 38".

Nominal weight of the Ruger carbine is 5 lbs. 12 ozs.



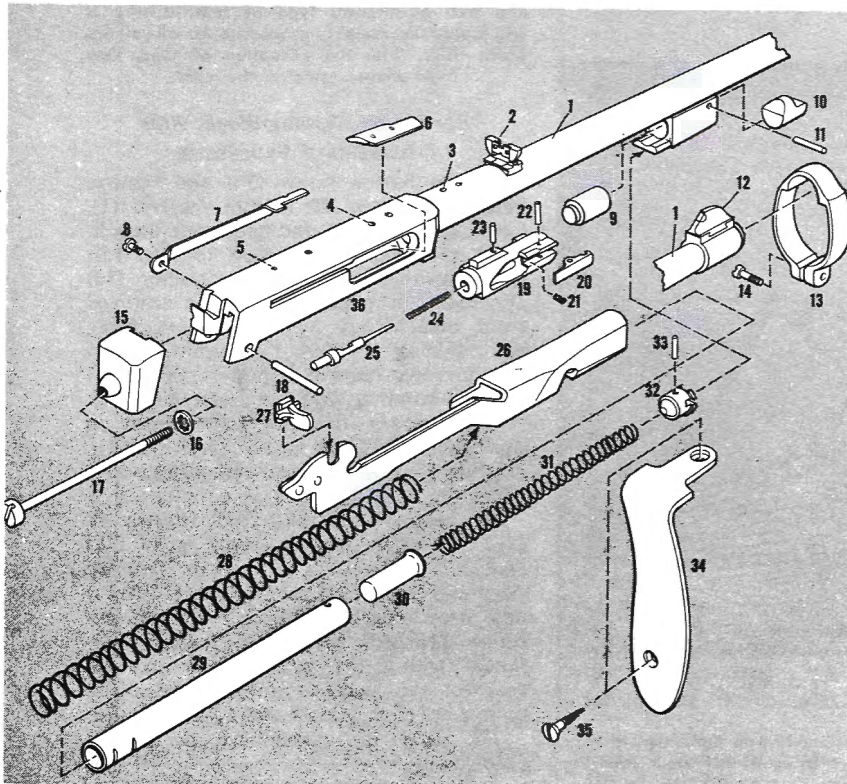
# RUGER .44 Magnum Carbine

By JAMES M. TRIGGS

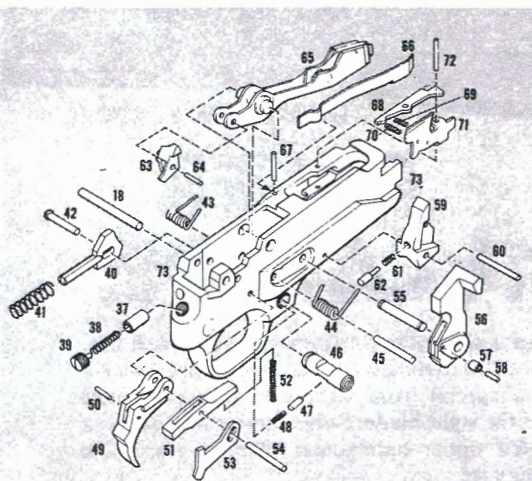
## Parts Legend

- |  |   |
|--|---|
| 1. Barrel  | 39. Disconnecter plunger spring screw         |
| 2. Rear sight  | 40. Lifter cam                                |
| 3. Front scope base hole plug screws (2)                 | 41. Lifter cam spring                         |
| 4. Cartridge guide plate screws (2)                      | 42. Lifter cam pin                            |
| 5. Rear scope base hole plug screws (2)                  | 43. Hammer spring, left                       |
| 6. Cartridge guide plate                                 | 44. Hammer spring, right                      |
| 7. Ejector   | 45. Hammer spring retaining pin               |
| 8. Ejector screw   | 46. Safety                                    |
| 9. Piston  | 47. Safety detent plunger                     |
| 10. Piston block plug                                    | 48. Safety detent plunger spring              |
| 11. Piston block plug retaining pin (inner & outer pins) | 49. Trigger                                   |
| 12. Front sight  | 50. Trigger cross pin                         |
| 13. Barrel band  | 51. Sear                                      |
| 14. Barrel band screw                                    | 52. Sear spring                               |
| 15. Recoil block   | 53. Disconnecter                              |
| 16. Recoil block bolt washer                             | 54. Trigger pivot pin                         |
| 17. Recoil block bolt                                    | 55. Hammer pivot pin                          |
| 18. Receiver cross pin                                   | 56. Hammer                                    |
| 19. Bolt   | 57. Hammer roller                             |
| 20. Extractor  | 58. Hammer roller pivot pin                   |
| 21. Extractor spring                                     | 59. Lifter latch                              |
| 22. Extractor pivot pin                                  | 60. Lifter latch pivot pin                    |
| 23. Firing pin retaining pin                             | 61. Lifter latch spring                       |
| 24. Firing pin retaining spring                          | 62. Lifter latch plunger                      |
| 25. Firing pin   | 63. Lifter dog                                |
| 26. Slide  | 64. Lifter dog pivot pin                      |
| 27. Slide handle   | 65. Lifter assembly                           |
| 28. Slide spring   | 66. Cartridge stop flat spring                |
| 29. Magazine tube  | 67. Cartridge stop flat spring retaining pin  |
| 30. Magazine follower                                    | 68. Cartridge stop                            |
| 31. Magazine spring                                      | 69. Flapper spring                            |
| 32. Magazine plug  | 70. Cartridge stop coil spring                |
| 33. Magazine plug cross pin                              | 71. Flapper                                   |
| 34. Buttplate  | 72. Cartridge stop pivot pin                  |
| 35. Buttplate screws (2)                                 | 73. Trigger guard (trigger mechanism housing) |
| 36. Receiver   |   |
| 37. Disconnecter plunger                                 |   |
| 38. Disconnecter plunger spring                          |   |

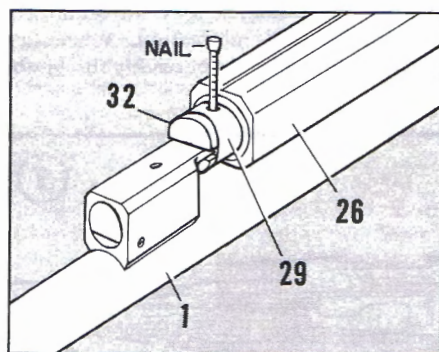
**Note:** Parts 37-73 are contained in trigger guard assembly



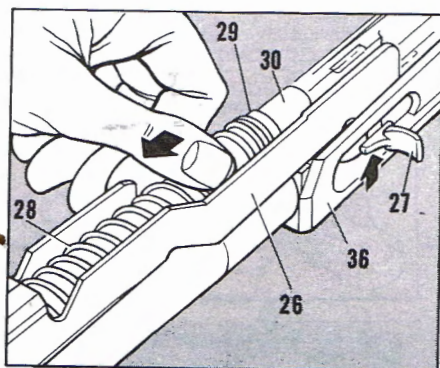




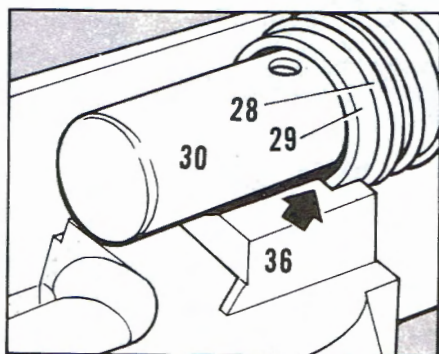
**1** Disassembly of trigger mechanism parts from housing (73) is not recommended and should only be undertaken at factory or by a qualified gunsmith when repair or replacement of parts is needed



**2** To reassemble slide and magazine assembly to barrel and receiver assembly, turn barrel and receiver assembly upside down and replace bolt in its forward (locked) position. Replace ejector (7) and ejector screw (8). Replace piston (9) in cylinder block with small end to rear. Replace magazine tube (29) in slide (26) and replace slide spring (28) in rear of slide. Seat slot in face of magazine plug (32) on lip at rear of piston block on underside of barrel as shown. Pull slide rearward (toward butt) slightly and insert a small nail in hole in magazine tube (29) as shown and move slide forward against nail



**3** Position slide handle (27) through hole at right side of receiver in its slot in slide as shown by arrow and pull slide spring forward (toward muzzle) over magazine tube until it clears end of tube



**4** Press slide assembly into receiver and seat rear end of magazine tube in slot at front underside of receiver (36) as shown by arrow. Remove nail from forward end of magazine tube, allowing slide to come to its full forward (locked) position. While holding down slide assembly replace trigger guard assembly (73) in bottom of receiver and replace receiver cross pin (18) through rear of receiver and trigger guard. Retract slide assembly and replace barrel and receiver assembly in stock. Replace barrel band (13) and tighten barrel band screw (14)

### Disassembly Procedure

Pull back slide handle (27) until it latches and check action to be sure carbine is unloaded. Loosen barrel band screw (14) and slide barrel band (13) off stock and barrel to front. Pull barrel and receiver upward and disengage tenon at rear of receiver from recoil block (15) in stock. Recoil block may be removed from stock by first removing buttplate (34) and unscrewing recoil block bolt (17) through hole in butt.

Push out receiver cross pin (18) and pull trigger guard assembly to rear and out bottom of receiver. To remove slide (26) turn receiver upside down and pull slide back and upward slightly while holding compressed slide spring (28) to prevent its forcible ejection. Release slide spring and draw it out rear of slide. Disengage slide handle (27) from its slot in slide and remove. Disengage slot in face of magazine plug (32) from lip at rear of piston block (integral with under side of barrel) and withdraw slide with magazine assembly from barrel and receiver assembly. Piston (9) will drop out rear of cylinder block. Magazine assembly may be disassembled by drifting out magazine plug cross pin (33) and removing plug (32), spring (31), and follower (30) from magazine tube (29).

Bolt (19) is removed from receiver by first removing ejector screw (8) and ejector (7). Then rotate bolt slightly from its forward locked position and draw it to rear to position where bolt lugs will clear cuts in receiver. Then lift the bolt out of bottom of receiver.

## A MAN TO REMEMBER

**JAMES WOLFE RIPLEY**  
*Championed the rifled-musket*

Born—Windham County, Conn.,  
Dec. 10, 1794

Died—Hartford, Conn., Mar. 15, 1870

**J**AMES WOLFE RIPLEY spent almost all of his adult life as a soldier. In no sense a gunsmith or mechanic himself, he made his contribution to weapons history through a series of assignments as commandant of various armories and arsenals and in high ordnance positions. In these he helped to improve gun manufacturing processes and stimulated the development of the Model 1855 rifled-musket, the first arm of its kind ever produced.

Ripley's military career began in 1813 when he received an appointment to the U. S. Military Academy at West Point. Because the War of 1812 was then in progress he was graduated the next year, commissioned a second lieutenant of artillery, and sent to Sackett's Harbor, N. Y. In 1817 he joined Andrew Jackson for the Seminole campaign and the invasion of Florida which followed.

In 1833 Ripley was appointed commandant of his first ordnance installation, the Kennebec Arsenal in Maine. He held that post for 8 years and attained the rank of major. Then came his tour as commandant of the Springfield Armory, 1841-54, during which he made his significant contributions to arms history. Under his supervision the Armory was rebuilt and converted into a first-rate arms production plant, and the rifled-musket was developed. This new arm was actually a rifle in every sense of the word. It was called a rifled-musket because its exterior form was that of the musket as opposed to the shorter rifle then used in the Service. It was designed to fire the expanding hollow-based 'minie ball' and was the first really practical military rifle for general use. Before the rifled-musket was officially adopted, Ripley was transferred to command the arsenal at Watertown, Mass., then to California as Chief of Ordnance of the Pacific, and then in 1857 he was made inspector of arsenals.

With the outbreak of the Civil War, Ripley was recalled to Washington and made Chief of Ordnance. In that position his devotion to the rifled-musket interfered with his judgment in regard to the new breech-loaders and repeaters, which he scorned and refused to consider except under strong pressure. He retired as a brigadier general in 1863 but continued to serve as inspector of armaments until 1869. The next year he died, having served his country continuously for 54 years through 4 wars.

—HAROLD L. PETERSON



# exploded views:



BY STEPHEN K. VOGEL

## RUGER MINI-14 CARBINE

**T**HE .223 (5.56 mm) Mini-14 resembles the U.S. M14 rifle in appearance and incorporates the Garand rotating bolt principle.

The Ruger-designed gun was first produced in 1974 in Southport, Conn., where about 1000 were made before production was transferred to the larger Sturm, Ruger plant in Newport, N.H. All Southport guns and early runs of those made at Newport bear serial numbers with the 180-prefix. The Southport model can be identified by the sporting type, gold bead front sight.

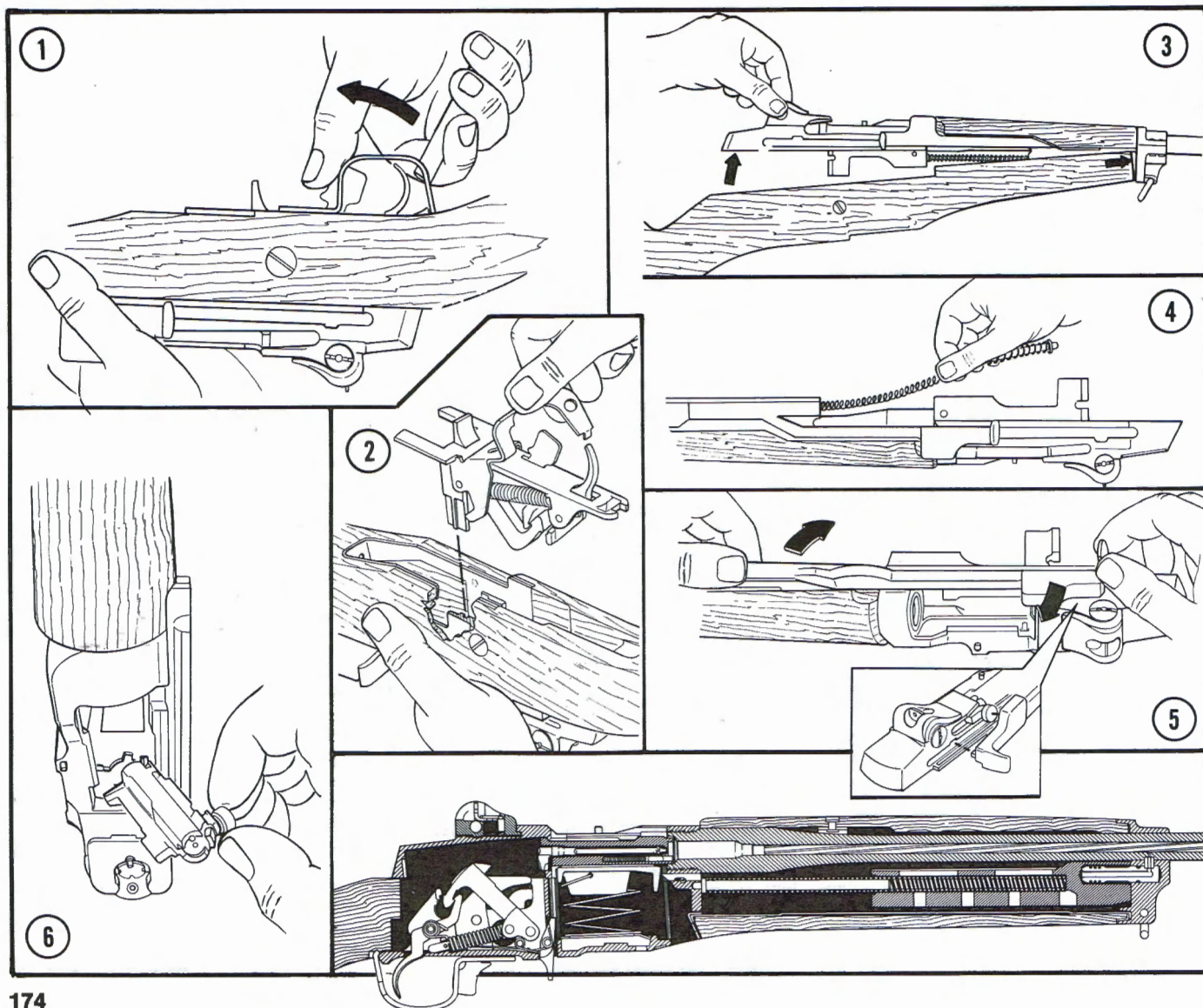
In mid-1978, a refined Mini-14 replaced the "180-" prefix models. Current production Mini-14 carbines bear the serial number prefix "181-". The drawings and information which follow apply only to the "181-" Mini-14 series.

Although several specialized variations of the Mini-14 designed for use by law enforcement and government agencies will be encountered from time to time, these are virtually identical to the

standard production guns with respect to disassembly procedures. Government service Mini-14 carbines are usually equipped with a flash hider and with a special front sight with protective steel "ears" on either side of the sight blade. Some service models use a heat resistant ventilated upper handguard which replaces the standard wooden handguard.

Several different magazines are offered for this rifle. The most frequently encountered is the five-shot, but 10- and 20-shot magazines are also common. It is of interest that some "counterfeit" 30-shot magazines bearing false Ruger markings, but not made by Sturm, Ruger and Co., have turned up.

The Mini-14 is a strong and reliable rifle designed for ease of cleaning and maintenance. Only the simplest tools are required to field strip the arm for cleaning and lubrication. When field stripped, the component parts are large and not readily susceptible to loss.





## Disassembly

1. Push magazine latch (35) forward and, with a forward/down movement, remove the magazine. Pull slide (59) fully to rear. Check chamber to be sure carbine is unloaded and release the slide which will ride forward under spring pressure. Place safety (54) in rear or "on" position (toward trigger). Note: Safety must be engaged and hammer cocked for disassembly or reassembly.

2. Holding the gun upside down, insert a small screwdriver or punch in the rear hole in the trigger guard (68) and, exerting forward pressure, unlatch the trigger guard, freeing its rear tab from the trigger housing (69). See Fig. A.

3. Pull the entire trigger guard/trigger group straight upward to remove. See Fig. B.

4. Holding the carbine with sights up, raise the rear of the receiver until it is just clear of the stock. Separate barreled action from stock (62). See Fig. C.

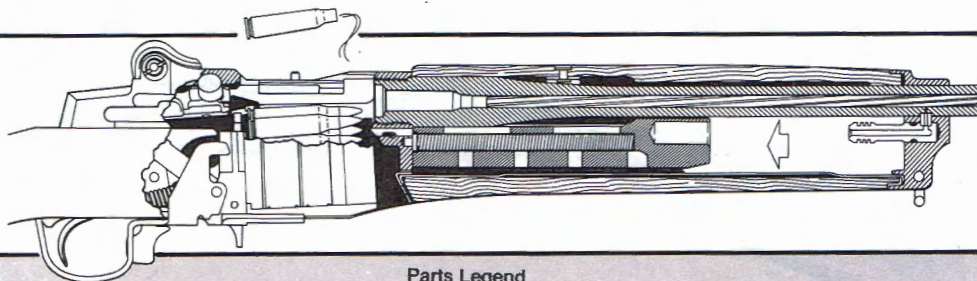
5. Grasp guide rod (22) and recoil spring (53) and pull toward muzzle until guide rod is free from its retaining recess in the front of the receiver. (Caution: Spring is under compression) Lift guide rod/recoil spring assembly clear of the receiver and withdraw the spring from the slide tunnel. See Fig. D.

6. Pull slide (59) to the rear until retaining projections are aligned with corresponding notches in the receiver. Remove slide as in Fig. E.

7. Move bolt (2) forward and pivot it upward. The firing pin (15) must be fully retracted for removal or replacement of bolt in receiver. Align tail of firing pin with slot in the interior of the receiver crossbridge. Remove bolt. See Fig. F. Note: Force should not be used or required to remove or replace bolt.

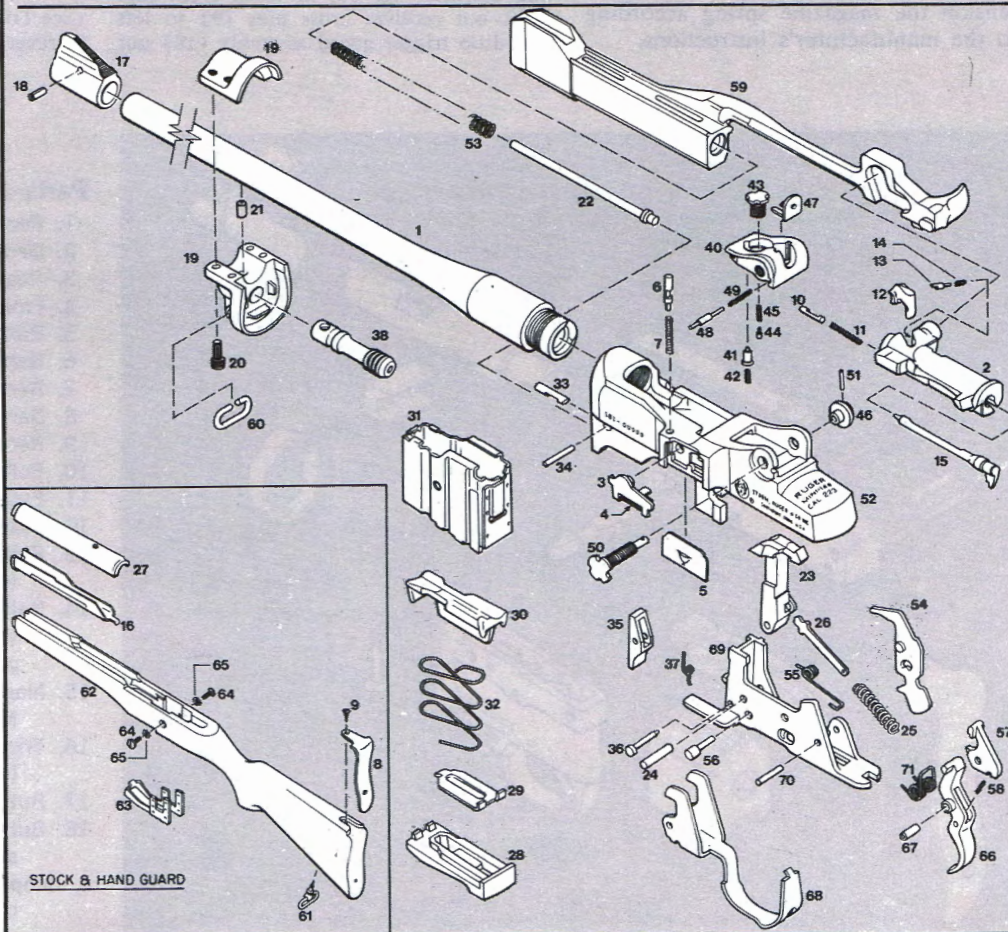
Further disassembly is not recommended by the factory and is not required for cleaning/maintenance. Reassembly is accomplished by reversing the above procedures.

In early 1979, Ruger announced a new version of the Mini-14 Carbine which is just now beginning to be delivered. It is in all respects identical to the 181-Series carbines except for the use of stainless steel which offers greater weather resistance and dramatically alters its appearance.



## Parts Legend

- |   |  |  |
|---|--|--|
| 1 Barrel                                  | 26 Hammer strut                                    | plunger                                      |
| 2 Bolt                                    | 27 Hand guard assembly                             | 49 Rear sight windage detent spring          |
| 3 Bolt lock assembly (with buffer spring) | 28 Magazine bottom, 5-shot                         | 50 Rear sight windage screw                  |
| 4 Bolt lock buffer spring                 | 29 Magazine bottom retainer, 5-shot                | 51 Rear sight windage screw pin              |
| 5 Bolt lock cover plate                   | 30 Magazine follower, 5-shot                       | 52 Receiver                                  |
| 6 Bolt lock plunger                       | 31 Magazine shell, 5-shot                          | 53 Recoil spring                             |
| 7 Bolt lock plunger spring                | 32 Magazine spring, 5-shot                         | 54 Safety                                    |
| 8 Butt plate                              | 33 Magazine catch, front                           | 55 Safety detent spring                      |
| 9 Butt plate screw (2 req'd)              | 34 Magazine catch retaining pin                    | 56 Safety spring retaining pin               |
| 10 Ejector                                | 35 Magazine latch                                  | 57 Secondary sear                            |
| 11 Ejector spring                         | 36 Magazine latch pivot pin                        | 58 Secondary sear spring                     |
| 12 Extractor                              | 37 Magazine latch spring                           | 59 Slide                                     |
| 13 Extractor plunger                      | 38 Piston  | 60 Sling swivel, front                       |
| 14 Extractor spring                       | 39 Rear sight assembly, complete (not illustrated) | 61 Sling swivel assembly, rear               |
| 15 Firing pin                             | 40 Rear sight base                                 | 62 Stock                                     |
| 16 Forearm liner & stock cap assembly     | 41 Rear sight elevation detent plunger             | 63 Stock reinforcement                       |
| 17 Front sight                            | 42 Rear sight elevation detent spring              | 64 Stock reinforcement screw (2 req'd)       |
| 18 Front sight cross pin                  | 43 Rear sight elevation screw                      | 65 Stock reinforcement lock washer (2 req'd) |
| 19 Gas block (top & bottom)               | 44 Rear sight elevation plunger                    | 66 Trigger                                   |
| 20 Gas block screw (4 req'd)              | 45 Rear sight elevation plunger spring             | 67 Trigger bushing                           |
| 21 Gas port bushing                       | 46 Rear sight nut                                  | 68 Trigger guard                             |
| 22 Guide rod                              | 47 Rear sight peep                                 | 69 Trigger housing                           |
| 23 Hammer                                 | 48 Rear sight windage detent                       | 70 Trigger pivot pin                         |
| 24 Hammer pivot pin                       |  | 71 Trigger spring                            |
| 25 Hammer spring                          |  |  |







# Ruger Model 10/22 Carbine

By JAMES M. TRIGGS

**T**HE Ruger Model 10/22 carbine, introduced in 1964, is chambered for the .22 long rifle cartridge, regular or high velocity. This semi-automatic blow-back-operated arm has a detachable 10-shot rotary box magazine.

Receiver and trigger guard of the Model 10/22 are machined from lightweight alloy. An unusual V-block arrangement secures the 18½" barrel to the receiver. Removal of the barrel from the receiver during routine maintenance is not recommended.

The magazine should be disassembled occasionally for cleaning. Carefully re-tension the magazine spring according to the manufacturer's instructions.

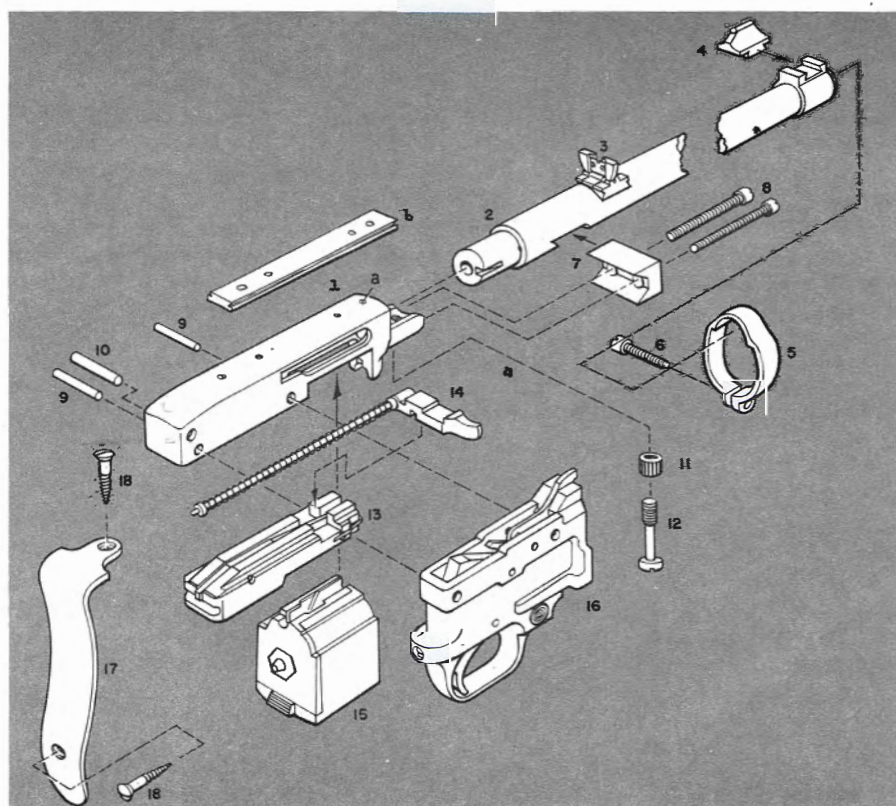
Open sights are standard on the Model 10/22 carbine. However, the receiver is drilled and tapped for top telescope mounts.

## Disassembly Procedure

Press up on magazine latch (6, Trigger Guard Assembly) and pull magazine (15) out from bottom of stock. Pull bolt handle (14) back and check action to be sure carbine is unloaded. Loosen barrel band screw (6) and slide barrel band (5) forward off stock. Unscrew takedown screw (12). Move safety (8, Trigger Guard Assembly) to centered position and lift barrel and assembly up out of stock from top. Drift out receiver cross pins (9) to left and drop trigger guard assembly (16) out

bottom of receiver (1). Drift out bolt stop pin (10). Pull bolt assembly (13) to rear and lift out through bottom of receiver. Remove bolt handle (14) with recoil spring and guide assembly through side of receiver. Note: Bolt handle, recoil spring, guide rod, and bushing are a factory-staked assembly and further disassembly is not recommended. This completes disassembly for normal cleaning purposes.

To remove barrel, unscrew barrel retainer screws (8) and pull barrel (2) with barrel retainer (7) out of receiver (1) to front. Disassembly of lock mechanism contained in trigger guard assembly (16) should only be undertaken by a competent gunsmith for repair or replacement of parts (See Trigger Guard Assembly). Reassemble in reverse order.



## Parts Legend

1. Receiver
  2. Barrel
  3. Rear sight assembly
  4. Front sight
  5. Barrel band
  6. Barrel band screw
  7. Barrel retainer
  8. Barrel retainer screws (2)
  9. Receiver cross pins (2)
  10. Bolt stop pin
  11. Escutcheon (contained in stock)
  12. Takedown screw
  13. Bolt assembly, complete  
(see Bolt Assembly)
  14. Bolt handle assembly  
(bolt handle, recoil spring,  
guide rod, and bushing)
  15. Magazine assembly (see  
Magazine Assembly)
  16. Trigger guard assembly, complete  
(see Trigger Guard Assembly)
  17. Buttplate
  18. Buttplate screws (2) (Stock and  
stock swivels are not shown.)
- a. Scope base adapter (available as  
optional "extra")



# A MAN TO REMEMBER

## WALTER HUNT

*Made forerunner of Winchester*

*Born—Martinsburg, N. Y.,*

*July 29, 1796*

*Died—New York City,*

*June 8, 1859*

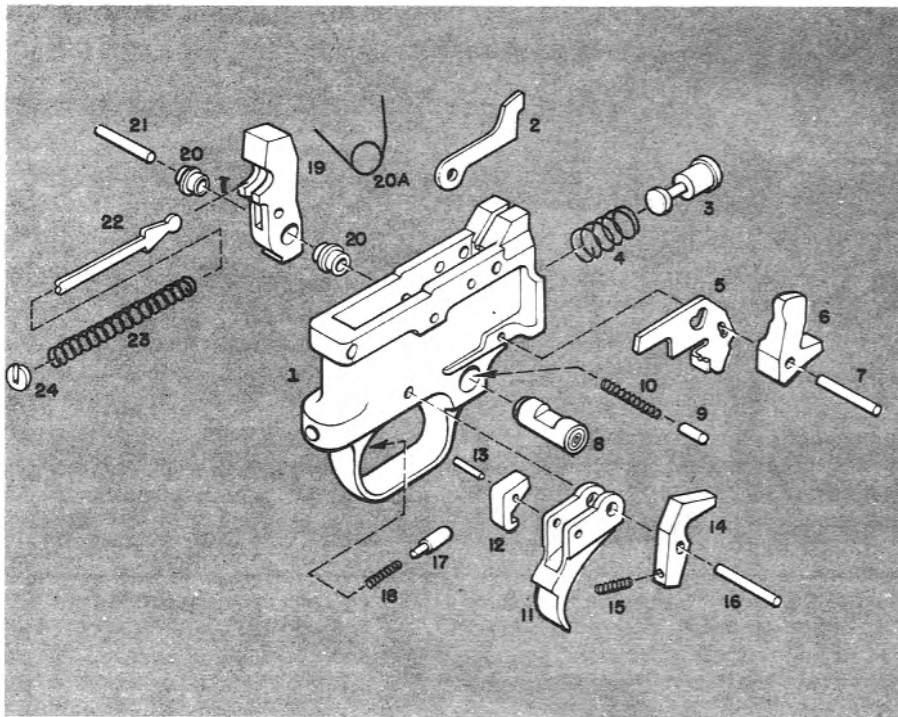


WALTER HUNT was a professional inventor and machinist with no business acumen whatsoever. He learned the machinist trade in his hometown and worked there until 1826. He moved to Brooklyn and attempted to set up a shop to manufacture a flax-spinning machine he had invented. The project collapsed in less than a year because of lack of capital, and Hunt began an endless round of experiments and inventions, many of which might have made him a fortune if he had had the money or the business ability to exploit them properly.

Among the Hunt inventions were a heating stove, a spring strap, an ice boat, a nail-making machine, an inkstand, a fountain pen, a forest saw, an alarm gong for police stations, a safety pin, and a sewing machine. The last 2 were probably Hunt's most important innovations, but neither brought him success. Safety pins were well known in antiquity, but Hunt's pattern was the forerunner of those used today. The story is that he invented it to pay a debt. At any rate, he sold all rights to it for \$100. His sewing machine predated Howe's and was very similar to it, but he never patented it and so lost all rights to Howe.

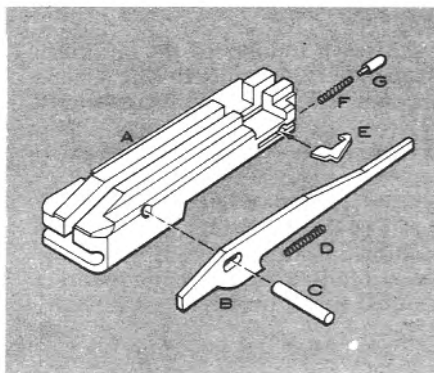
Hunt is best known to gun students, however, for his work on breech-loading arms. First he developed a bullet with a hollow base large enough to hold its powder charge and closed by a cork wad pierced with a hole to transmit the flash from a separate primer. He patented the bullet in 1848, and the next year he obtained a patent on a gun to use it. This gun, which he called a "volitional repeater", had a tubular magazine under the barrel and a straight-drive firing pin impelled by a spiral spring, both features well ahead of their time. The repeating mechanism was too fragile and complicated, but it formed the basis for the Winchester rifle after improvements by Lewis Jennings, B. Tyler Henry, Horace Smith, and Daniel Wesson. As with almost all his inventions, he promptly sold it to someone else for development.

Hunt married in 1812 or 1814 and had 4 children. He died poor at the age of 63.—HAROLD L. PETERSON



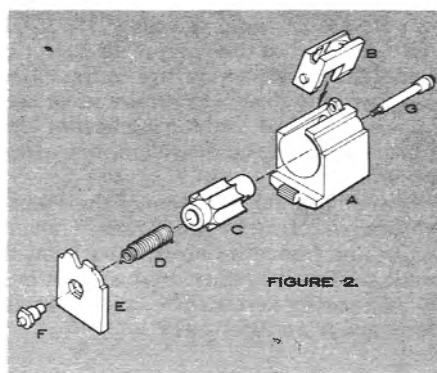
**Trigger Guard Assembly**

- |                                  |                            |
|----------------------------------|----------------------------|
| 1. Trigger guard                 | 14. Sear                   |
| 2. Ejector                       | 15. Sear spring            |
| 3. Magazine latch plunger        | 16. Trigger pivot pin      |
| 4. Magazine latch plunger spring | 17. Trigger plunger        |
| 5. Bolt lock                     | 18. Trigger plunger spring |
| 6. Magazine latch                | 19. Hammer                 |
| 7. Magazine latch pivot pin      | 20. Hammer bushings (2)    |
| 8. Safety                        | 20A. Bolt lock spring      |
| 9. Safety detent plunger         | 21. Hammer pivot pin       |
| 10. Safety detent plunger spring | 22. Hammer strut           |
| 11. Trigger                      | 23. Hammer spring          |
| 12. Disconnecter                 | 24. Hammer strut washer    |
| 13. Disconnecter pivot pin       |                            |



**Bolt Assembly**

- |                              |
|------------------------------|
| A. Bolt                      |
| B. Firing pin                |
| C. Firing pin stop pin       |
| D. Firing pin rebound spring |
| E. Extractor                 |
| F. Extractor spring          |
| G. Extractor plunger         |

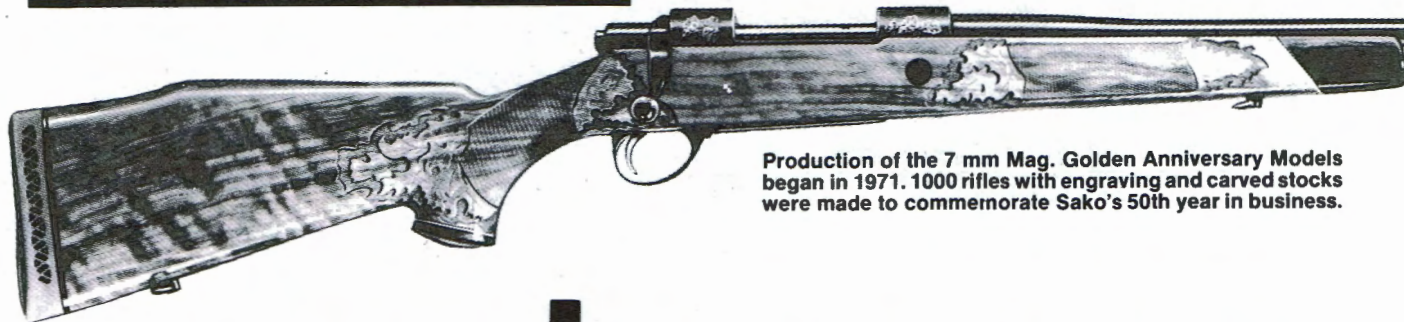


**Magazine Assembly**

- |                     |
|---------------------|
| A. Magazine shell   |
| B. Magazine throat  |
| C. Magazine rotor   |
| D. Rotor spring     |
| E. Magazine cap     |
| F. Magazine cap nut |
| G. Magazine screw   |



# Exploded views:



Production of the 7 mm Mag. Golden Anniversary Models began in 1971. 1000 rifles with engraving and carved stocks were made to commemorate Sako's 50th year in business.

## sako CENTER-FIRE BOLT-ACTION

By Technical Staff



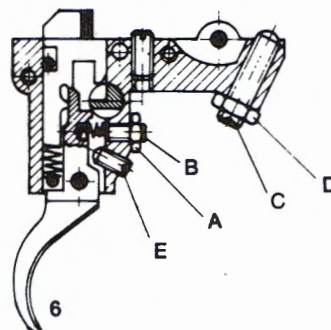
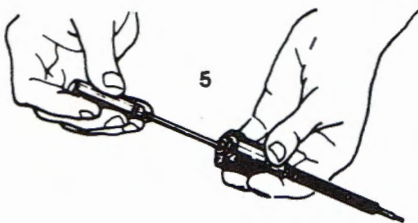
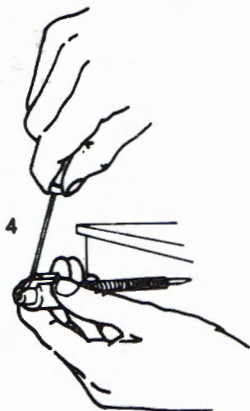
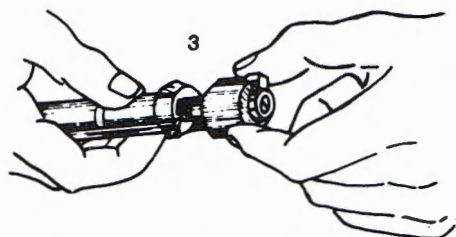
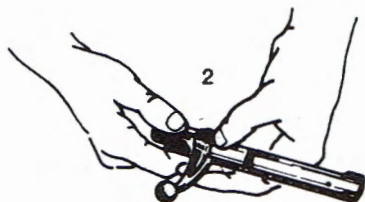
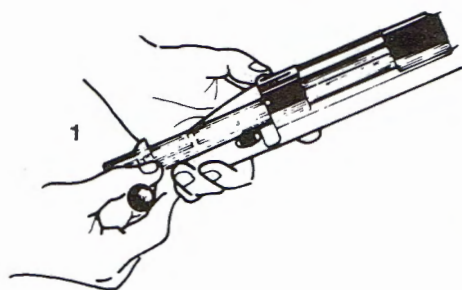
The Sako Vixen (now AI) Rifle in the De Luxe version. Skip-line checkering and extra-high luster bluing differentiate De Luxe from standard sporter or heavy-barrel models.

Of Sako Ab of Riihimäki, Finland, is that country's largest firearm and ammunition manufacturer. Their best-known products are their bolt action center-fire rifles popularized as the Vixen (L-461), Forester (L-579), and Finnbear (L-61). These three types are generally similar but differ in action length. The short action Vixens have been chambered for such calibers as .17, .222, .222 Mag. and .223; the medium length Foresters for .220 Swift, .243, .244, and .308; the relatively long Finnbears for "standard" length cartridges including .270 and .30-'06, medium length magnums—.300 Win. and .338 Win.—and the long .375 H&H Mag.

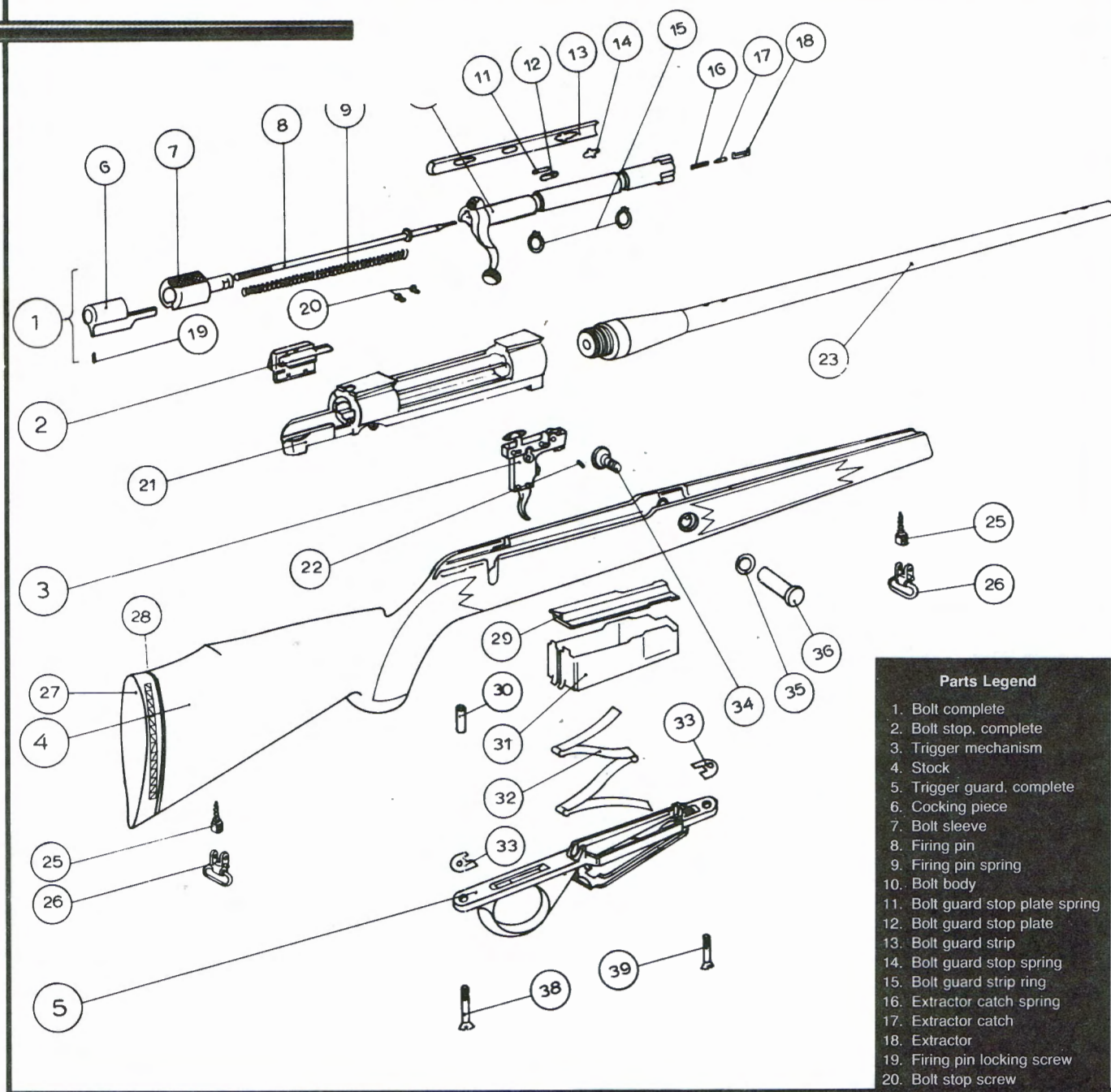
By decision of the current Sako importers, Stoeger Industries, the familiar, if confusing, nomenclature of the rifles has now been simplified. The Vixen, Forester, and Finnbear names have been dropped in favor of the designations AI, AII, and AIII, indicating action length.

Construction and disassembly features of these rifles—regardless of name—are similar.

Basically a modification of the Mauser system, the Sakos have one unusual feature which must be noted. The firing pin is threaded into the cocking piece, and hence its protrusion from the bolt face is adjustable. If the firing pin is removed or tampered with, it must be correctly readjusted and secured by its locking screw. The factory recommended firing protrusion specifications are from .059"-.071".







#### Parts Legend

1. Bolt complete
2. Bolt stop, complete
3. Trigger mechanism
4. Stock
5. Trigger guard, complete
6. Cocking piece
7. Bolt sleeve
8. Firing pin
9. Firing pin spring
10. Bolt body
11. Bolt guard stop plate spring
12. Bolt guard stop plate
13. Bolt guard strip
14. Bolt guard stop spring
15. Bolt guard strip ring
16. Extractor catch spring
17. Extractor catch
18. Extractor
19. Firing pin locking screw
20. Bolt stop screw
21. Receiver
22. Bolt stop pin
23. Barrel
24. Front sight (not shown)
25. Swivel nut
26. Swivel
27. Butt plate
28. Spacer
29. Magazine follower
30. Trigger guard bushing
31. Magazine housing
32. Magazine spring
33. Trigger guard bottom plate
34. Adjuster screw
35. Adjuster bottom plate
36. Adjuster
37. Sight hood (not shown)
38. Rear guard screw
39. Front guard screw

#### Disassembly Procedure:

To remove the bolt (Fig. 1), depress the bolt release button on the bolt stop assembly (2) with the left thumb, lift the bolt handle and withdraw the bolt from the rear of the receiver. Hold the bolt body (10) in the left hand and, with the bolt rear pointing up (Fig. 2), turn the bolt sleeve (7) clockwise until it disengages from the body (Fig. 3). Loosen the firing pin locking screw (19) with a small screw driver (Fig. 4). Hold the rear of the firing pin assembly in the left hand with the firing pin point bearing on

a wooden surface to prevent parts loss or injury from spring pressure. With a screwdriver, turn the slotted end of the threaded firing pin (8) downward out of the cocking piece (Fig. 5). To reassemble bolt, reverse the above procedure, making sure the firing pin protrusion is between .059" and .071". Separating the barreled action from the stock is done conventionally by first removing the front and rear trigger guard screws.

The Sako trigger is factory adjusted for sear engagement, at-

tempts to change this adjustment could be hazardous and would void the guarantee. Weight of pull and backlash can be adjusted simply and positively by the owner (Fig. 6). To lessen weight of pull, loosen lock nut (A) and back of screw (B) until desired weight is reached. Retighten lock nut (A). To increase weight of pull, reverse above procedure. Backlash may be reduced, if required, by turning in screw (E). NOTE: Be sure screw (C) and its lock nut (D) are tight before attempting adjustment.





# SAVAGE MODEL 6 RIFLE

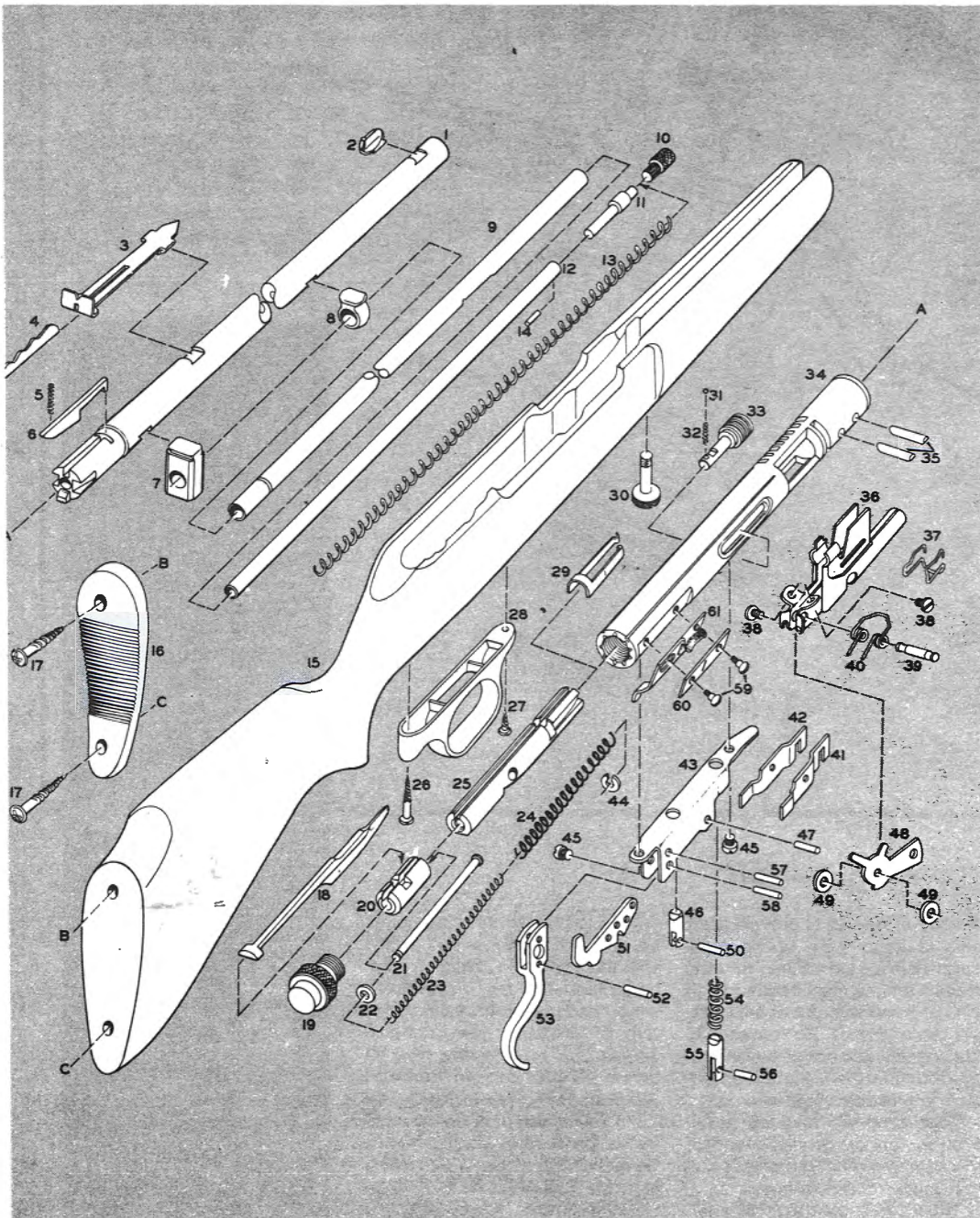
By Thomas E. Wessel

IN 1938, Savage Arms Corp. introduced their Model 6 cal. .22 rimfire rifle with tubular magazine holding 15 long rifle, 17 long, or 22 short cartridges. It is essentially a straight-pull, locked breech, bolt-action rifle, but by adjustment will fire semi-automatically with regular or high-velocity .22 long rifle cartridges. It will not function semi-automatically with the .22 long or short cartridges as they develop insufficient power to operate the mechanism.

The shift from semi-automatic to manual action, or vice versa, is accomplished through the bolt handle. When

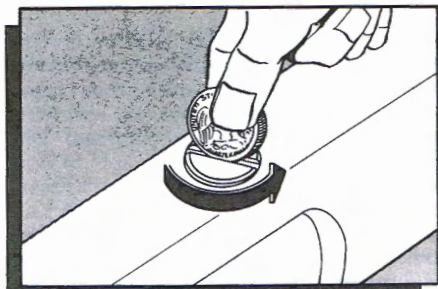
## Parts Legend

1. Barrel
2. Front sight
3. Rear sight
4. Rear sight step
5. Bumper spring
6. Bumper
7. Rear magazine mount
8. Front magazine mount
9. Outside magazine tube
10. Magazine plug
11. Magazine follower
12. Inside magazine tube
13. Magazine follower spring
14. Magazine plug pin
15. Stock
16. Buttplate
17. Buttplate screw (2)
18. Firing pin
19. Recoil plug
20. Hammer
21. Breech bolt spring rod
22. Breech bolt spring washer
23. Breech bolt spring
24. Hammer spring
25. Breech bolt
26. Long trigger guard screw
27. Short trigger guard screw
28. Trigger guard
29. Extractor
30. Takedown screw
31. Locking bolt plunger ball
32. Locking bolt plunger ball spring
33. Locking bolt
34. Receiver
35. Barrel pin (2)
36. Magazine guide
37. Cartridge guide spring
38. Magazine screw (2)
39. Lifter pin
40. Lifter spring
41. Right detent lever
42. Left detent lever
43. Release housing
44. Hammer spring washer
45. Release housing screw
46. Release plunger
47. Detent lever pin
48. Lifter
49. Lifter spacer (2)
50. Release plunger pin
51. Release lever
52. Release lever actuating pin
53. Trigger
54. Detent plunger spring
55. Detent plunger
56. Detent plunger pin
57. Trigger pin
58. Release lever pin
59. Safety screw (2)
60. Safety spring
61. Safety

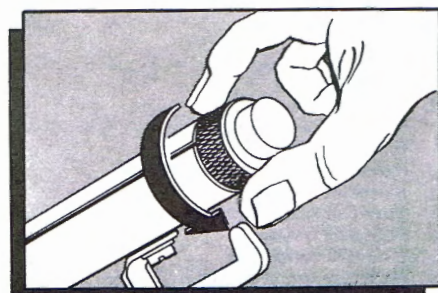




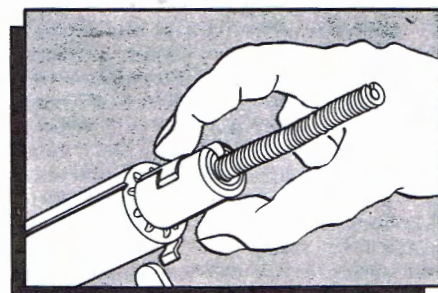
the bolt handle is pulled outwards, the gun functions semi-automatically, provided it is loaded with .22 long rifle cartridges. On firing, the bolt handle with attached breech bolt is blown to the rear, at the same time extracting and ejecting the fired cartridge case and cocking the hammer. In returning to battery, the bolt picks up and chambers a fresh round from the magazine to complete the operating cycle. When manual operation is desired, the bolt handle is pushed in when the breech bolt has been moved forward to closed position with a cartridge in the chamber. This locks the breech bolt shut,



**1** To disassemble barrel and action from stock (15), unscrew takedown screw (30) using a large coin such as a quarter. This precludes burring of the screw. After this disassembly, all working parts are exposed for lubricating, replacement, etc.



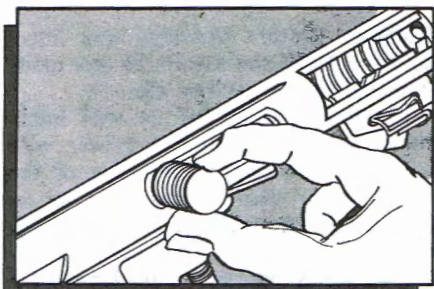
**2** To disassemble action for cleaning, first insure that rifle is unloaded and that no cartridge is in the chamber. Next, move action to closed position and pull trigger (53). Unscrew recoil plug (19) at rear of receiver (34)



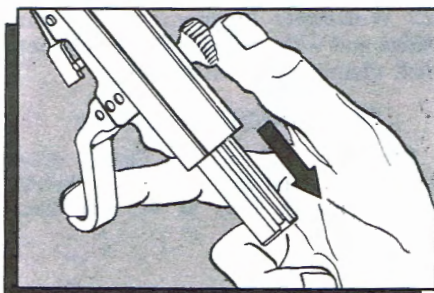
**3** Withdraw hammer (20) and kindred assembly, and firing pin (18). The latter will drop away from hammer assembly when just about fully withdrawn

and after discharging the cartridge it is necessary to pull outward on the bolt handle to unlock the action so that the breech bolt can be retracted to extract and eject the fired cartridge case. Cartridges can be either loaded singly into the chamber, or functioned through the tubular magazine.

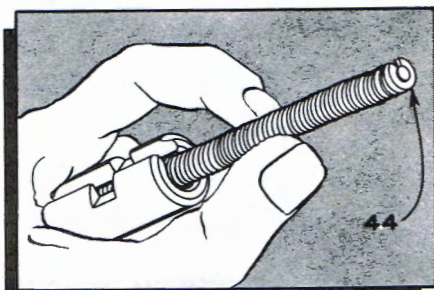
From its inception to date, changes in the basic Model 6 design have been minor. Rifles designated Savage Model 6, Stevens Model 87 and Model 87-K, and Springfield Model 76, are essentially identical. Currently these rifles are furnished with grooved receivers for use with 'tip-off' type scope mounts.



**4** Now remove locking bolt (33) which was held in place by the firing pin



**5** With a grip as shown, hold trigger back. This keeps left hand free to slide breech bolt (25) from rear of receiver, since, if properly lubricated, the oil will form a suction between the inside surface of receiver and breech bolt and thus prevent it dropping out. Assemble the Model 6 in reverse order, being sure to pull trigger prior to screwing in recoil plug



**6** To further disassemble hammer assembly, grip assembly in left hand as shown using thumb and index finger to keep tension on breech bolt spring (23) and hammer spring (24). Then tap off hammer spring washer (44) and slowly release tension on both springs, which now may be removed. Breech bolt spring rod (21) and breech bolt spring washer (22) may also be removed. Gun is assembled in reverse order

## A MAN TO REMEMBER

ETHAN ALLEN

*He brought pepperbox to its highest development*

*Born—Bellingham, Mass.,*

*Sept. 2, 1808*

*Died—Jan. 7, 1871*

**A**LTHOUGH he was probably no relation of the famous Revolutionary War hero of the same name, Ethan Allen came from an old New England family, and all his business ventures were family affairs. His first partnership was with his brother-in-law Charles Thurber. Thomas P. Wheelock of Allen & Wheelock was another brother-in-law. After Wheelock's death in 1864, 2 of Allen's sons-in-law, S. Forehand and H. C. Wadsworth, were admitted to the firm.

After leaving Bellingham, Allen first set himself up as a gunsmith in Grafton. There he formed the firm of Allen & Thurber, making pistols, especially pepperboxes. In 1842 the firm moved to Norwich, Conn., and in 1847 to Worcester, Mass. In 1856 Thurber retired, and the firm name was changed to Allen & Wheelock; then, after Wheelock's death, it became Ethan Allen & Co. in late 1864 or early 1865.

Allen was concerned with the manufacture of many different kinds of guns, including single-shot pistols, double-barrel pistols, and rifles, but it was his pepperboxes that brought him fame. Allen's first patent was granted in 1837 for a double-action lock. Actually this patent described a single-shot weapon, but as applied to a pepperbox a single pull on the trigger cocked the hammer, revolved the barrels, and fired the gun. It made the Allen pepperbox the fastest firing weapon of its day. For over a decade it was far better known and more popular than the Colt revolver. In 1845 Allen was granted a second patent covering an improved mechanism for rotating the barrels of a pepperbox and a device which would enable the gun to be fired either single- or double-action. By that time, however, the days of the pepperbox were numbered. Gradually the lighter and more accurate revolver supplanted it in popularity, and after Allen's death the firm dropped the pepperbox in favor of that weapon.

Ethan Allen's life spanned the entire percussion period. At the time of his death his firm was manufacturing a full line of cartridge guns. It had been a unique enterprise, too, in being the largest American 19th century arms manufactory catering entirely to the sporting trade and the citizenry of the country without ever having the support of a government contract for military arms.—HAROLD L. PETERSON





# SAVAGE MODEL 24 COMBINATION GUN

By JAMES M. TRIGGS

THE Stevens .22-.410 over-under combination rifle and shotgun was first offered in 1939 by the J. Stevens Arms Co., a wholly owned subsidiary of the Savage Arms Corp. This gun was chambered for the .22 long rifle cartridge and the 3" length of the .410 shotshell. Guns produced initially had walnut stocks and fore-ends, but stock assemblies of Tenite plastic were later made standard. During World War II the U. S. Air Force purchased 10,000 of these combination guns with Tenite stocks for issue to aircrewmembers as survival weapons.

Commercial production was resumed in 1945. In 1950 a slightly improved type with walnut stock assembly and somewhat heavier barrel replaced the original model. It was designated Savage Model 24. When the .22 Winchester

Magnum Rimfire cartridge was introduced in 1959, the Model 24 was made available in this caliber also.

In 1962, the Model 24 was introduced in DL and MDL types, with fire selector button on left side of the frame rather than on the right as on the original model. The Model 24 DL is chambered for the .22 long rifle cartridge and is optionally available with shotgun barrel chambered for either the 20-ga. 3" shell or the .410 3" shell. The Model 24 MDL is chambered for the .22 Winchester Magnum Rimfire cartridge and with the same choice of shot-shell chamberings as the DL.

## Disassembly Procedure

To remove fore-end (U, Fig. 1) grasp it at the tip and pull away from barrel. Move top snap (16) to side and open

breech by tipping barrel downward. Unhook barrel lug from hinge pin at forward end of frame. Remove barrels from frame.

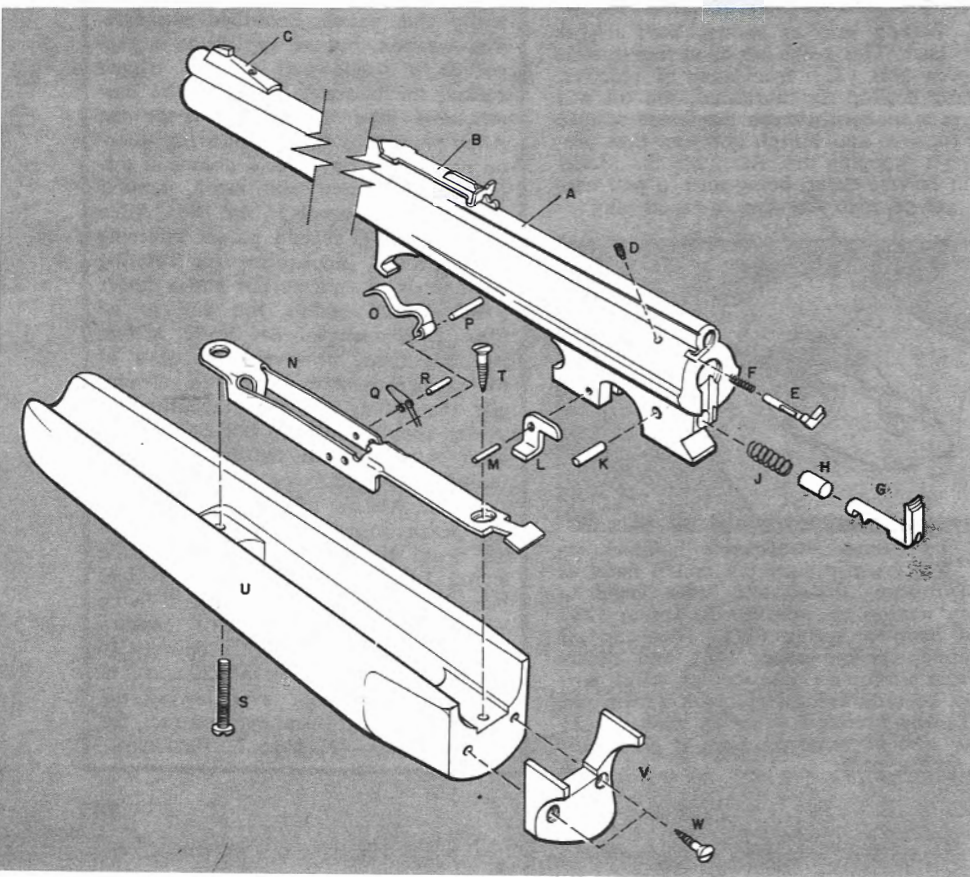
To remove buttstock, unscrew both buttplate screws and remove buttplate. Unscrew stock bolt (2) through hole in butt of stock. Slide buttstock off frame to rear.

Further disassembly of frame and lock parts is not recommended and should be unnecessary for normal cleaning purposes. Major parts are retained in frame by pivot pins. Firing pins are retained in frame by screws (10 & 11) which are staked at the factory which makes them rather difficult to remove.

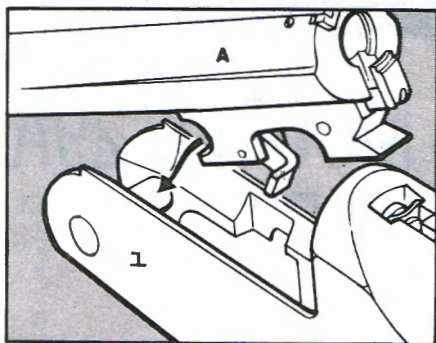
## Barrel & Fore-end Parts Legend

- A. Barrel
- B. Rear sight assembly
- C. Front sight assembly
- D. Extractor screw
- E. Extractor, .22
- F. Extractor spring, .22
- G. Extractor, .410
- H. Extractor stem, .410
- J. Extractor lever spring
- K. Extractor pin
- L. Extractor lever
- M. Extractor lever pin
- N. Fore-end spring housing
- O. Fore-end spring
- P. Fore-end spring pin
- Q. Fore-end spring spring
- R. Fore-end spring spring pin
- S. Fore-end spring housing screw, front
- T. Fore-end spring housing screw, rear
- U. Fore-end
- V. Fore-end iron head
- W. Fore-end iron head screws (2)

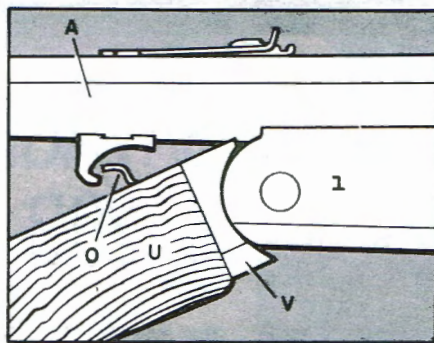
1 After removing fore-end (U) from underside of barrel (A) and separating barrel from frame, loosen extractor screw (D) and withdraw .22 extractor (E) and spring (F) from breech end of barrel. Drift out extractor pin (K) and remove .410 extractor (G) and stem (H) from breech end of barrel. Drift out extractor lever pin (M) and remove extractor lever (L) from lug under barrel. Remove extractor lever spring (J). Note: extractor lever spring (J) is inserted in barrel lug between front end of lug and arm on extractor lever (L). Fore-end parts are easily removed by removing screws S and T. Reassemble in reverse







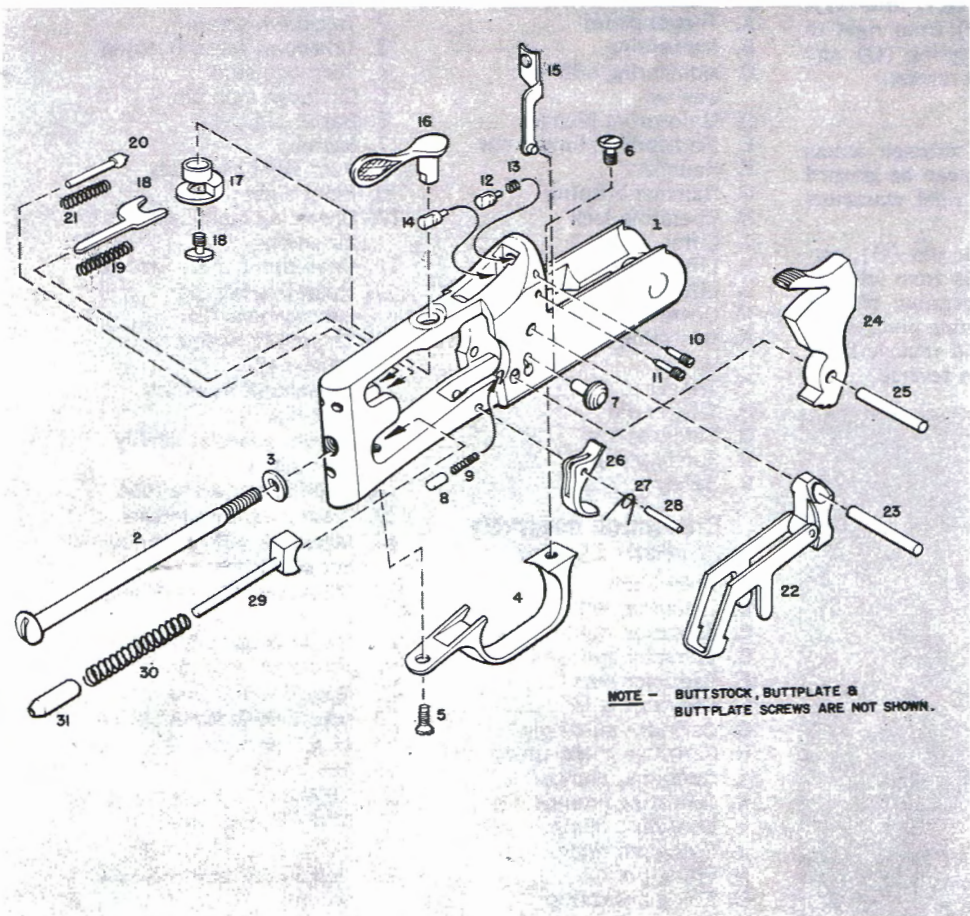
2 When reassembling barrel (A) to frame (1), hook cut-out at forward end of barrel lug onto hinge pin in forward end of frame as shown. Swing barrels upward, locking barrels to frame



3 When reassembling fore-end (U) to underside of barrel (A), place rear of fore-end iron head (V) in position shown against front edge of frame. Note position of fore-end spring (O) in relation to hook on underside of barrel. Press fore-end up against underside of barrel until it locks in place

### Parts Legend

- |                                   |                             |                                 |
|-----------------------------------|-----------------------------|---------------------------------|
| 1. Frame                          | 11. Firing pin screw, .410  | 21. Locking bolt plunger spring |
| 2. Stock bolt                     | 12. Firing pin, .22         | 22. Locking bolt assembly       |
| 3. Stock bolt washer              | 13. Firing pin spring, .22  | 23. Locking bolt pin            |
| 4. Trigger guard                  | 14. Firing pin, .410        | 24. Hammer                      |
| 5. Rear trigger guard screw       | 15. Selector                | 25. Hammer pin                  |
| 6. Front trigger guard screw      | 16. Top snap                | 26. Trigger                     |
| 7. Selector button                | 17. Top snap sleeve         | 27. Trigger spring              |
| 8. Selector button plunger        | 18. Top snap screw          | 28. Trigger pin                 |
| 9. Selector button plunger spring | 18A. Top snap plunger       | 29. Mainspring plunger          |
| 10. Firing pin screw, .22         | 19. Top snap plunger spring | 30. Mainspring                  |
|                                   | 20. Locking bolt plunger    | 31. Mainspring plunger seat     |



## A MAN TO REMEMBER

HORACE SMITH

*Founded an important firm*



Born—Cheshire, Mass.,  
Oct. 28, 1808

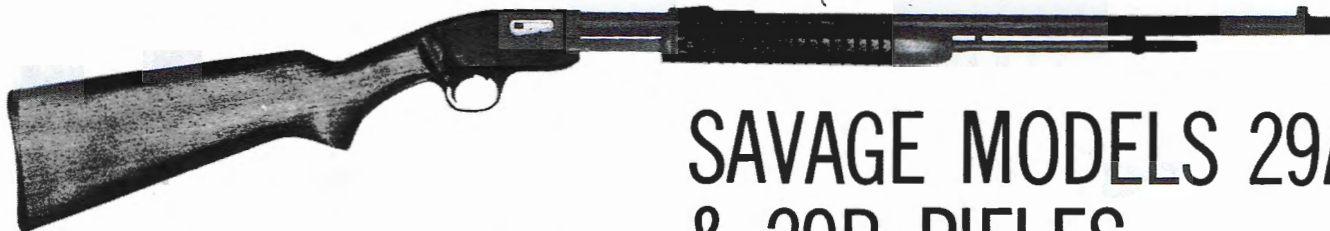
Died—Springfield, Mass.,  
Jan. 15, 1893

HORACE SMITH was associated with the manufacture of firearms almost from his birth. His father, who was a carpenter by trade, worked at the Springfield Armory. When young Horace completed his public school education at the age of 16, he too obtained employment there as a gunsmith's apprentice, and he continued to work in the Armory for the next 18 years. After leaving Springfield he worked briefly in a number of other gun factories, including those of Charles Thurber, Eli Whitney, Allen & Thurber, Oliver Allen, and Allen, Brown & Luther.

About 1850 Smith began his experimental and developmental work. He obtained his first patent in 1851 for a breech-loading rifle. In 1853 he entered into partnership with Daniel Wesson, a fellow gunsmith, for the manufacture of a repeating firearm they had perfected between them and which they patented in 1854. In 1855, however, they sold out to the Volcanic Arms Co. and Smith retired to Springfield to operate a livery stable with his brother-in-law.

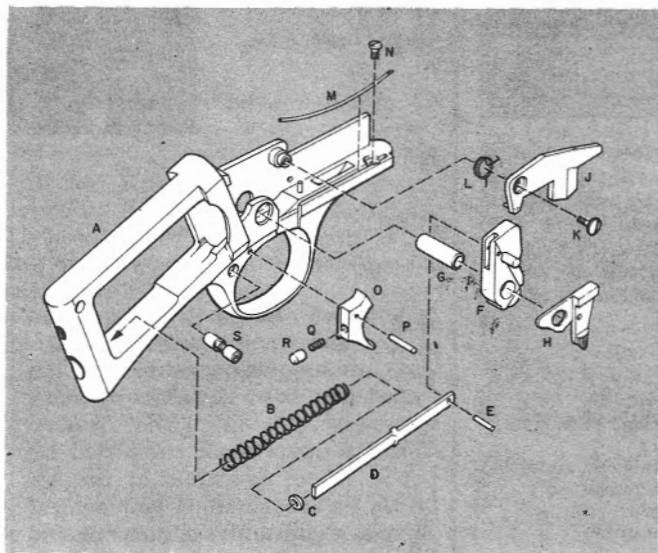
Wesson, however, kept busy building a revolver to fire a metallic cartridge he and Smith had developed, and in 1857 they resumed their partnership to manufacture the Smith & Wesson revolver, although they had not yet received their basic patents. The new enterprise prospered as the partners continually worked to improve their product. Finally, in 1873, Smith, who had been executive head of the firm, sold his interests in the business to Wesson and retired to Springfield, where he became an alderman and a director of a number of industrial and commercial enterprises.—HAROLD L. PETERSON.





# SAVAGE MODELS 29A & 29B RIFLES

By JAMES M. TRIGGS

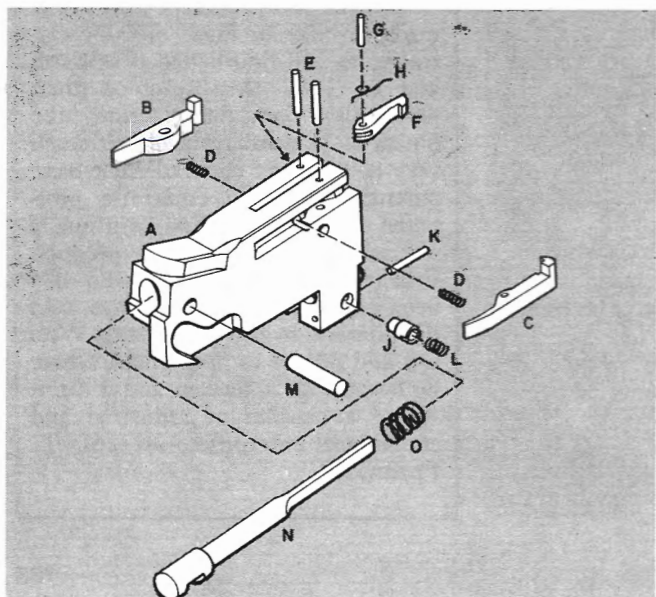


**1** To disassemble trigger guard assembly, press in hammer bushing (G) until operating lock (H) can be lifted out. Remove operating lock spring screw (N) and operating lock spring (M). Place hammer (F) in fired position and push out hammer bushing (G) from right to left. Hold trigger to rear and lift out hammer, mainspring (B), and plunger (D).

Drop safety (S) out. Remove lifter screw (K), lifter (J), and lifter spring (L). Drift out trigger pin (P) from right to left and remove trigger (O). Remove safety spring (Q) and safety plunger (R) from trigger. Reassemble in reverse.

**2** Drift extractor pins (E) up with punch through access holes in breechbolt (A) until ends of pins can be grasped with pliers and withdrawn. Remove left and right extractors (B & C) and extractor springs (D).

Using same procedure remove cartridge guide pin (G), cartridge guide (F), and cartridge guide spring (H) from left side of breechbolt. Operating plunger (J) and operating plunger spring (L) are removed after drifting out operating plunger pin (K). Drift out firing pin retaining pin (M) and remove firing pin (N) and spring (O) out rear. Reassemble in reverse.



**T**HE Savage Model 29A hammerless slide-action cal. .22 rimfire rifle was introduced in 1933. Receiver of this takedown rifle was grooved subsequently for use with tip-off scope mounts and the designation was then changed to Model 29B. The catalog designation 29G was at one time used to indicate the grooved receiver version which was actually stamped 29B. The tubular magazines of the Models 29A and 29B rifles will hold 14 long rifle, 16 long, or 20 short cal. .22 rimfire cartridges. Bead front sight and open elevator rear sight are standard. Buttstock and slide handle are of walnut. Total weight of the rifle is 5¾ lbs.; over-all length is 41".

The original Savage Model 29 slide-action rifle (initially designated Model 1929) was introduced in 1929 and discontinued in 1933. The Savage firm cannot supply parts for this obsolete model nor do they offer repair service for it.

The Model 29A rifle which replaced it represented a complete redesign of the original Model 29 rifle.

## Trigger Guard Assembly Parts Legend

- A. Trigger guard
- B. Mainspring
- C. Mainspring retainer washer
- D. Mainspring plunger
- E. Mainspring plunger pin
- F. Hammer
- G. Hammer bushing
- H. Operating lock
- J. Lifter
- K. Lifter screw
- L. Lifter spring
- M. Operating lock spring
- N. Operating lock spring screw
- O. Trigger
- P. Trigger pin
- Q. Safety spring
- R. Safety plunger
- S. Safety

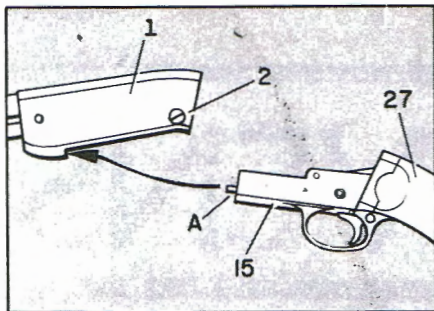
## Breechbolt Assembly Parts Legend

- A. Breechbolt
- B. Extractor, left
- C. Extractor, right
- D. Extractor springs (2)
- E. Extractor pins (2)
- F. Cartridge guide
- G. Cartridge guide pin
- H. Cartridge guide spring
- J. Operating plunger
- K. Operating plunger pin
- L. Operating plunger spring
- M. Firing pin retaining pin
- N. Firing pin
- O. Firing pin spring

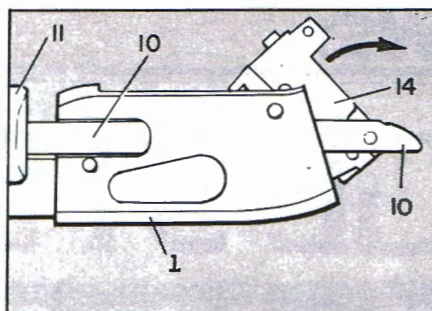
## Parts Legend

- 1. Receiver
- 2. Takedown screw
- 3. Takedown screw bushing
- 4. Cartridge stop
- 5. Cartridge stop pin
- 6. Barrel pin
- 7. Barrel
- 8. Rear sight assembly
- 9. Front sight
- 10. Operating handle bar assembly
- 11. Operating handle (wood)
- 12. Operating handle escutcheons (2)
- 13. Operating handle screws (2)
- 14. Breechbolt assembly (see Fig. 2)
- 15. Trigger guard assembly (see Fig. 1)
- 16. Outside magazine tube
- 17. Front magazine mount
- 18. Magazine tube retaining screw bushing
- 19. Magazine tube retaining screw
- 20. Inside magazine tube
- 21. Magazine plug pin
- 22. Magazine follower
- 23. Magazine follower spring
- 24. Magazine plug
- 25. Stock bolt
- 26. Stock bolt washer
- 27. Stock (not shown)
- 28. Buttplate (not shown)
- 29. Buttplate screws (2) (not shown)





**3** To disassemble rifle, unscrew take-down screw (2) as far as possible and draw stock and trigger guard assembly (15 & 27) away from receiver (1). In reassembling, be sure lip at front end of trigger guard, shown at "A", enters its slot in front end of receiver as shown by arrow.



**4** To remove breechbolt assembly (14) from receiver (1), draw operating handle (11) back with receiver inverted until breechbolt rises slightly. Grasp breechbolt and rotate upward in direction shown until pin on operating handle bar assembly (10) can be disengaged from slot.

### Disassembly Procedure

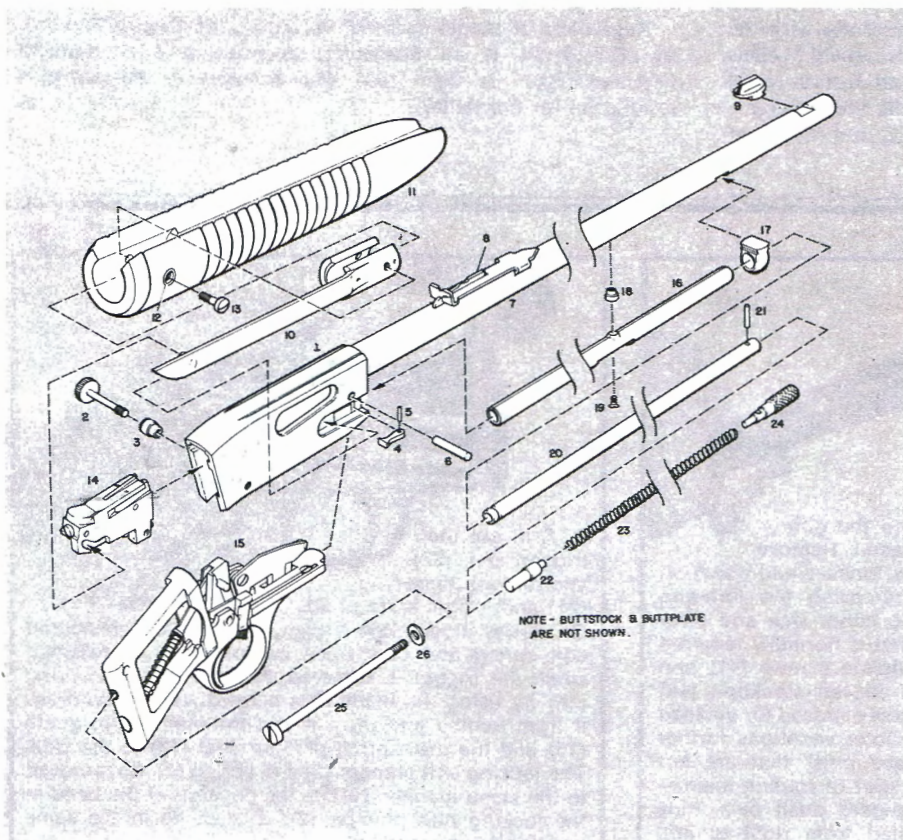
Check action to be sure rifle is unloaded and magazine is empty. Close action and unscrew takedown screw (2) at left of receiver (1) until screw threads are clear of trigger guard (15). Pull receiver and barrel assembly forward, separating trigger guard and stock assembly from receiver.

To remove buttstock (not shown in drawings), remove buttplate screws and buttplate and unscrew stock bolt (25) through hole at rear of stock. Remove stock bolt (25) and stock bolt washer (26) and separate trigger guard assembly (15) from stock.

To remove breechbolt assembly (14), hold receiver inverted and make sure take-down screw is clear of inside of receiver.

Pull operating handle (11) and operating handle bar assembly (10) to rearward position. Lift forward end of breechbolt upward and pull back out of receiver.

Remove inside magazine tube (20) and remove magazine tube retaining screw (19) through loading port in outside magazine tube (16). Press magazine tube away from barrel (7) slightly with fingers and remove magazine tube retaining screw bushing (18). Tap front magazine mount (17) out of dovetail in barrel from left to right and withdraw outside magazine tube (16). Push operating handle (11) to forward position and pull operating handle bar (10) out of receiver to side. Take care not to lose cartridge stop (4) and pin (5) which are now free to drop out of receiver. Reassemble in reverse. ■



## A MAN TO REMEMBER

ELISHA KING ROOT

*Designed  
Machinery for  
Making the Colt  
Revolvers*



Born—Ludlow, Mass.,

1808

Died—Hartford, Conn.,

1865

**E**LISHA ROOT was directly responsible for much of the success of 2 great American manufacturing companies, Collins & Company, and Colt. Born on his father's farm, young Root attended public schools until he was old enough to start apprenticeship as a machinist. After completing his training, he worked in various shops in Chicopee Falls and Ware until he was 24. Then, in 1832, he went to work for the Collins Company in Collinsville, Conn., a firm specializing in axes.

It was during his employment by Collins that Root first displayed his mechanical genius. Starting as a lathe operator, he quickly rose to be foreman, and finally superintendent. On the way he transformed the company from a small hand shop to a well-equipped factory and enabled the firm to obtain almost a monopoly on manufacture of American axes.

In 1849 Samuel Colt offered Root the superintendency of his new armory at Hartford, and Root accepted. The armory was still in the building stage, and during the next 5 years Root designed many of the buildings as well as most of the machinery. He invented machines for boring and rifling gun barrels, stock-turning, and cartridge-making. Most important, however, were his drop hammer inventions of 1853 and 1858 which became standard and remained popular until the modern board drop was invented. Upon Colt's death in 1862, Root became president of the armory, and held this post until his own death in 1865.

Of Root it has been said, "The credit for the revolver belongs to Colt; for the way they were made, mainly to Root". — HAROLD L. PETERSON.



# SAVAGE STEVENS MODEL 94-C SHOTGUN

BY ARTHUR PENCE

**B**EGINNING in the 1870s J. Stevens & Co., later J. Stevens Arms & Tool Co., made single-shot, break-open shotguns with exposed hammers. In 1920 the firm was purchased by the Savage Arms Co., who continued the use of the Stevens name on many of their products. Savage-Stevens used other brand names as well, including Springfield.

Around 1929 the first shotgun to be called the Model 94 was merchandised as a Springfield. It had many desirable features such as two way top snap, rebounding exposed hammer, take-down construction, color case-hardened receiver, and an automatic non-selective ejector. Some of these features have been dropped and revived and dropped again in response to the economic climate over the decades.

Almost identical guns were marketed concurrently with the pre-war M-94 Springfield; these included the Springfield Models 944, a 4½ lb. .410; 94-R with large fore-end and Jostam recoil pad, and 94-P with adjustable choke. Under the Stevens name were the Models 104 for small bores (24, 28, 32, and .410) and 107 for large and small bores.

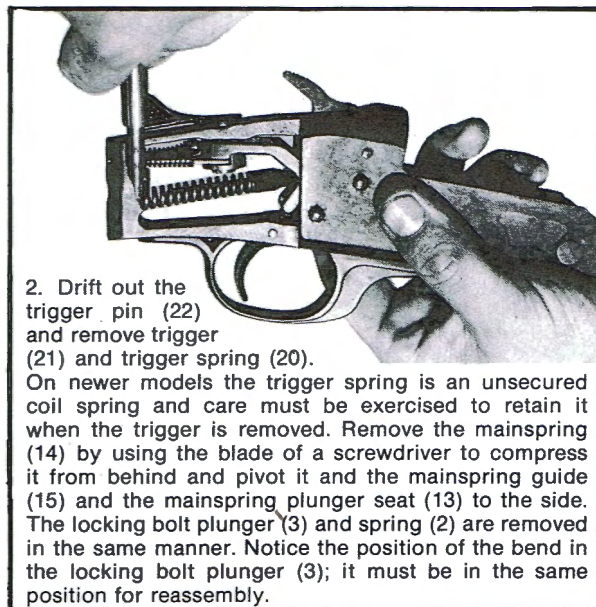
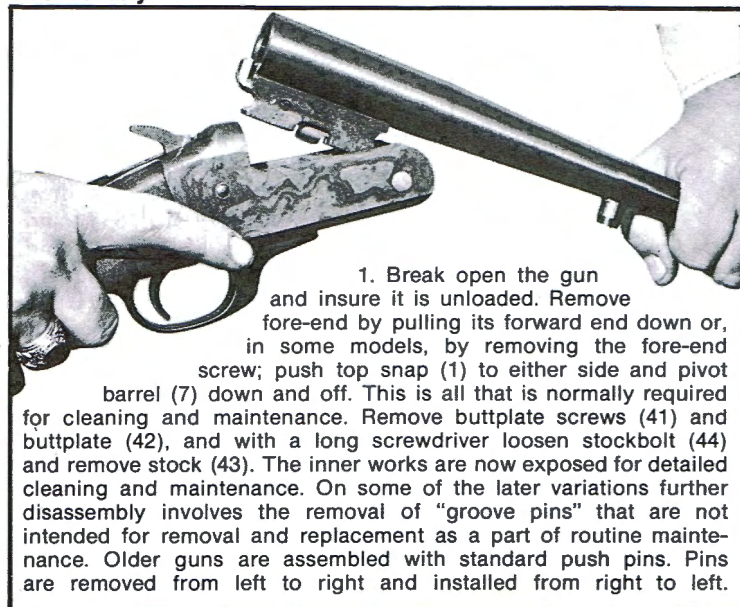
After WW II the Springfield name was dropped, and by 1949 the "94 Stevens" briefly acquired a Tenite stock and fore-end. By 1951 the plastic stock was replaced with walnut-finished hardwood, to the relief of traditionalists.

By the 1960s the shotguns were usually cataloged as the Savage-Stevens 94-C (in 12, 16, 20 gauges and .410 bore) and the youth model, 94-Y (in 20 ga. or .410 bore) with shorter stock and recoil pad.

The current production is marked Model 94 Series P and has the above-mentioned standard features except that the rebounding hammer has been replaced by a hammer with half cock notch and spring retracted inertia firing pin, and also has impressed checkering on the pistol grip.

Regardless of model name or variation, the Savage-Stevens-Springfield 94 is an attractive, popular, and economical beginner's gun or farm tool and deserves its 50-year-plus reputation for durability. ■

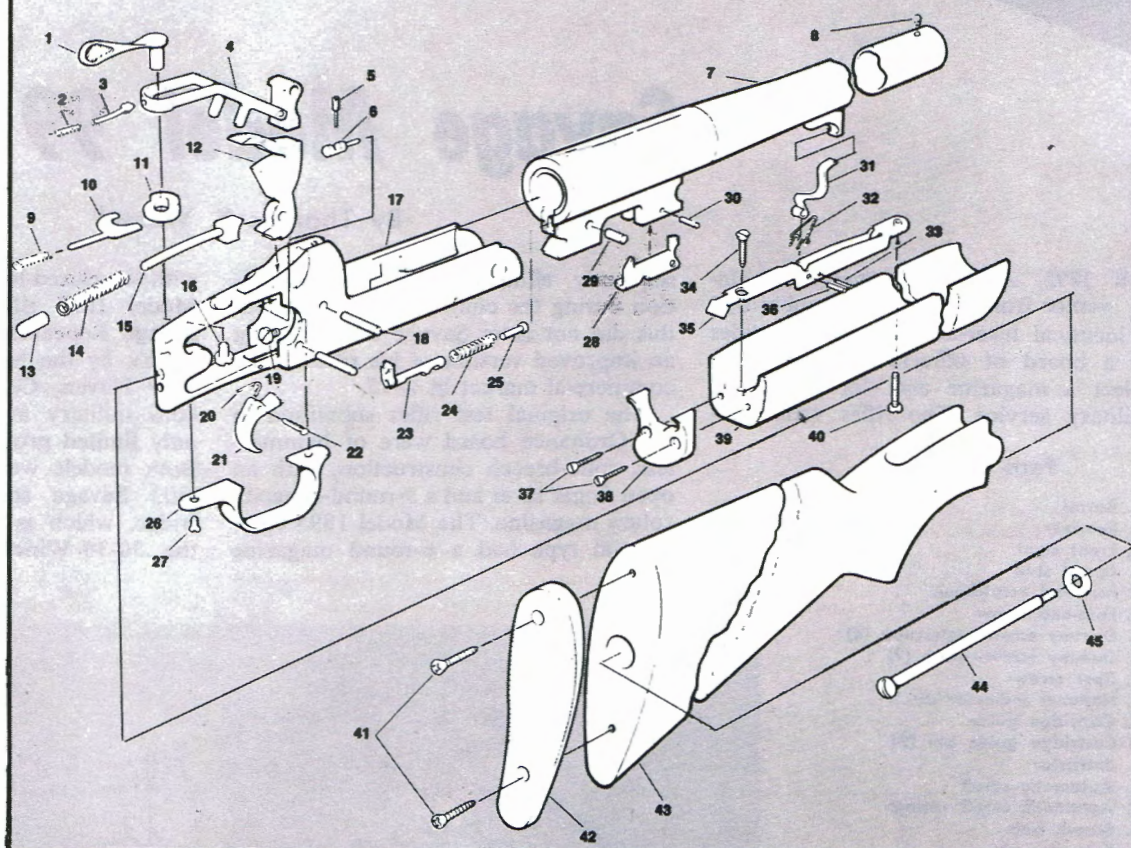
### Disassembly





# Parts Legend

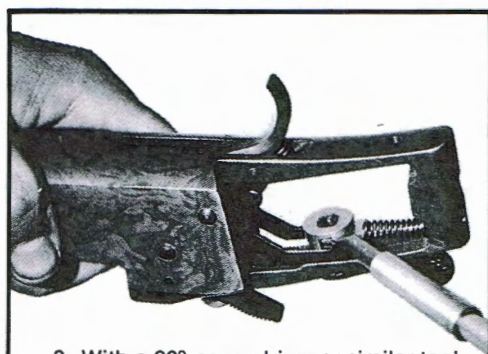
- 1 Top snap
- 2 Locking bolt plunger spring
- 3 Locking bolt plunger
- 4 Locking bolt assembly
- 5 Firing pin screw
- 6 Firing pin
- 7 Barrel
- 8 Front sight
- 9 Top snap plunger spring
- 10 Top snap plunger
- 11 Top snap sleeve
- 12 Hammer
- 13 Mainspring plunger seat
- 14 Mainspring
- 15 Mainspring plunger assembly
- 16 Top snap screw
- 17 Frame
- 18 Locking bolt, hammer pin
- 19 Trigger guard screw
- 20 Trigger spring
- 21 Trigger
- 22 Trigger pin
- 23 Extractor
- 24 Ejector spring
- 25 Ejector starter pin
- 26 Trigger guard
- 27 Trigger guard screw



- 28 Ejector hook
- 29 Extractor stop pin
- 30 Extractor lever pin
- 31 Fore-end spring
- 32 Fore-end spring spring
- 33 Fore-end spring spring pin

- 34 Fore-end spring housing screw
- 35 Fore-end spring housing
- 36 Fore-end spring pin
- 37 Fore-end iron head screw
- 38 Fore-end head
- 39 Fore-end wood

- 40 Fore-end screw
- 41 Butt plate screw
- 42 Butt plate
- 43 Stock
- 44 Stock bolt
- 45 Stock bolt washer



3. With a 90° screwdriver or similar tool, the top snap screw (16) can now be removed. Then the top snap collar (11) can be gently pried off the top snap (1), freeing the top snap plunger and spring. Drift out the locking bolt and hammer pins (18), and these parts may be removed. The firing pin screw (5) is removed and the firing pin (6) withdrawn to the rear. On later models the firing pin is retained by a transverse pin and is spring retracted.



4. The inner trigger guard screw (19) can now be reached from the top for removal; also remove the outer trigger guard screw (27) and the trigger guard (26) is free. The extractor (23) should be uncocked; if it is not, uncock it by lifting slightly the flange on the left side of the ejector hook (28). Then apply some pressure against the extractor (23) and drift out the extractor stop pin (29), being careful not to lose control of the ejector spring (24) and ejector starter pin (25). Finally, drift out the extractor lever pin (30), and the ejector hook (28) can be removed.

To remove the fore-end parts, take out the fore-end iron screws (37) and fore-end head (38), then the fore-end spring housing screw (34) and the fore-end screw (40). There remain only the fore-end spring (36) and the fore-end spring pin (33) to be removed. On current models the fore-end is retained by a single screw. Reassembly holds no hidden surprises; parts are replaceable in the same manner they were removed.





# Savage Model 99 Rifle

By Thomas E. Wessel

**I**N 1892, Arthur W. Savage, an inventor from Utica, N. Y., submitted 2 identical lever-action repeating rifles to a board of officers empowered to select a magazine arm for the U. S. military service. The rifles were sub-

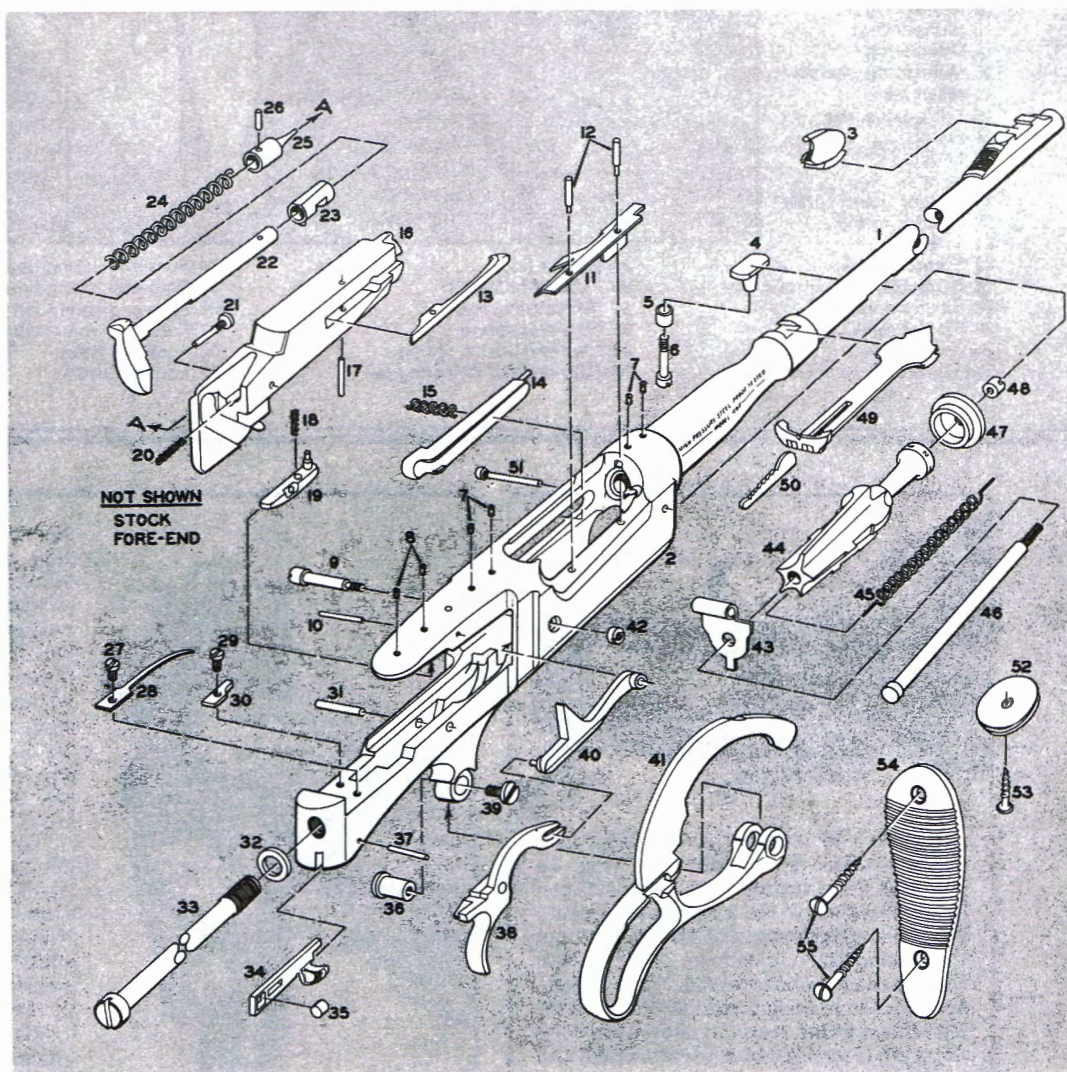
sequently eliminated from consideration during the course of the trials, but this did not deter Savage from offering an improved version of his rifle on the commercial market in 1895.

The original test rifles submitted to the Ordnance board were of hammerless, solid-breech construction, with an open finger lever and a 9-round-capacity rotary magazine. The Model 1895 commercial type had a 6-round magazine

with a closed-loop finger lever. The Model 1895 rifle was made for the Savage Repeating Arms Co. of Utica, N. Y., by the Marlin Firearms Co. of New Haven, Conn. It was offered in both military and sporting type with only limited production of the former. Both models were chambered for the .303 Savage smokeless powder cartridge, which is ballistically similar to the .30-30 Winchester.

## Parts Legend

1. Barrel
2. Receiver
3. Front sight
4. Barrel stud
5. Fore-end escutcheon
6. Fore-end screw
7. Dummy screw—telescope (4)
8. Dummy screw—tang (2)
9. Sear screw
10. Hammer indicator pin
11. Cartridge guide
12. Cartridge guide pin (2)
13. Extractor
14. Automatic cutoff
15. Automatic cutoff spring
16. Breech bolt
17. Extractor pin
18. Hammer indicator spring
19. Hammer indicator
20. Hammer retractor spring
21. Hammer bushing screw
22. Hammer
23. Hammer bushing
24. Mainspring
25. Firing pin
26. Firing pin securing pin
27. Trigger spring screw
28. Trigger spring
29. Breech bolt stop screw
30. Breech bolt stop
31. Trigger pin
32. Stock bolt washer
33. Stock bolt
34. Lever lock—safety
35. Lever lock tension spring
36. Lever bushing
37. Lever lock pin
38. Trigger
39. Lever bushing screw
40. Sear
41. Lever
42. Sear screw nut
43. Carrier spindle support
44. Carrier
45. Carrier spring
46. Carrier spindle
47. Carrier spindle head
48. Carrier spindle nut
49. Rear sight
50. Rear sight step
51. Carrier spindle head screw
52. Pistol grip cap
53. Pistol grip cap screw
54. Buttplate
55. Buttplate screw (2)





The Savage Arms Co. was subsequently incorporated in 1897, and in January of 1899 offered the Savage Repeating Rifle Model 1899 in cal. .303 Savage only. Capacity of the rotary magazine was 5 rounds. An interesting feature was the magazine indicator which told at a glance how many rounds remained in the magazine. The numbers on the brass indicator were visible through a small port on the left side of the receiver.

The manual safety just in rear of the trigger guard loop locks the finger lever shut and blocks the trigger when en-

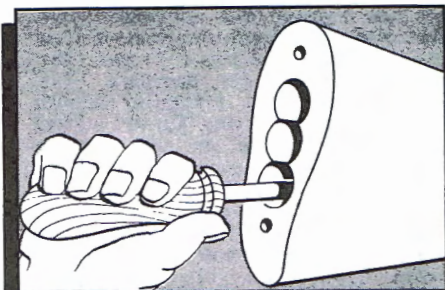
gaged. A hinged bar in the front of the breech bolt was actuated by the firing pin to provide visual and tactile indication when the action was cocked. This feature was an improvement over the Model 1895 which had a round observation hole in the top of the breech bolt, opening into the firing pin well. It was thus possible to visually note whether the rifle was cocked or not, but dirt, rain, or snow could enter the port.

The Model 1899 was immediately popular with sportsmen throughout the world, and through the years has become the mainstay in the Savage firearms line. Changes in the basic action have been minor. The hinged bar cocking indicator was eventually dropped in favor of a small pin protruding through the upper receiver tang, and rear end of

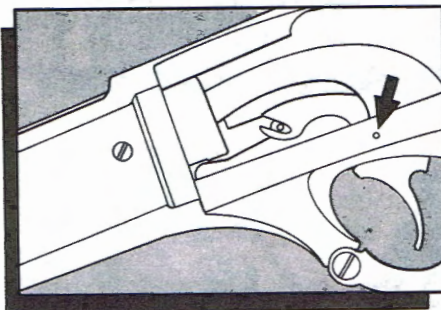
breech bolt was changed from square to rounded contour. Both solid-frame and takedown models have been made in many grades. It was the first commercial rifle (1912) to be chambered for a high-velocity cal. .22 cartridge, the .22 Savage Hi-Power. It was also the first commercial rifle chambered for the .250-3000 Savage cartridge introduced in 1913. This cartridge drove its 87-gr. bullet at the then unheard of velocity of 3000 f.p.s.

The Model 1899 has been offered in several other calibers, including .25-35 Winchester, .30-30 Winchester, .32-40 Winchester, and .38-55 Winchester. At one time an auxiliary .410 shotgun barrel was furnished for takedown models. The .410 shotshells were loaded singly into the breech as they would not function through the magazine.

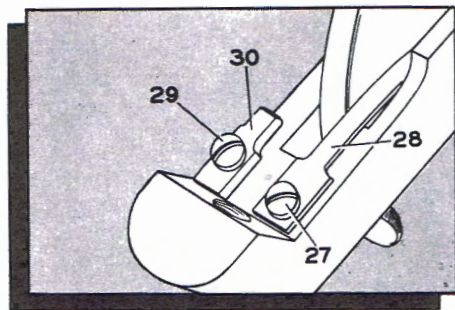
The Savage Model 99 is currently offered in .243 Winchester, .250-3000 Savage, .300 Savage, .308 Winchester, and .358 Winchester calibers in solid-frame styles only. Current factory designation is Savage Model 99 Hi-Power Lever Action Rifle.



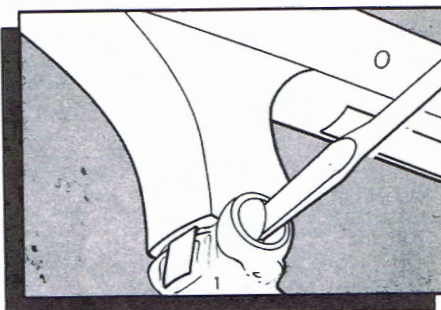
**1** To disassemble the Model 99, unscrew 2 buttplate screws (55) and lift away buttplate (54). Then, using a long-shanked screwdriver, remove stock bolt (33) and stock bolt washer (32). Pull stock away from receiver (2). It may be necessary to tap the stock using palm of the hand. Caution: Tap stock straight to rear to avoid splitting. At this point, all working parts are exposed and accessible for cleaning, lubrication, etc.



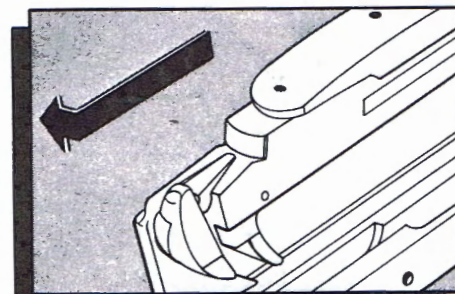
**4** Next, using a flat-nosed punch, drift out trigger pin (31). This allows trigger (38) to be removed. Use a plastic dish or tray to hold disassembled parts to preclude their loss



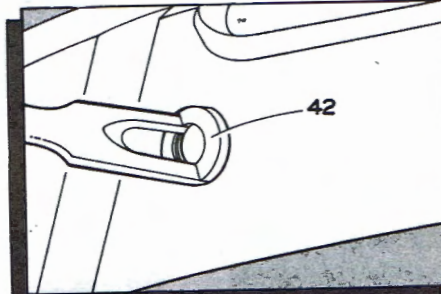
**2** To further disassemble, remove breech bolt stop screw (29), breech bolt stop (30), trigger spring screw (27), and trigger spring (28)



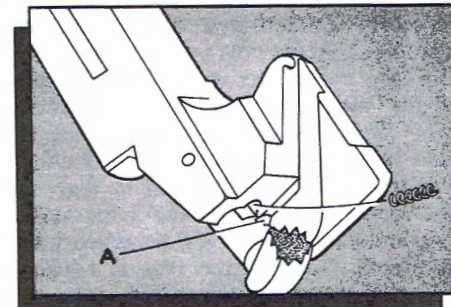
**5** Continue disassembly by removing lever bushing screw (39). Use a proper-size screwdriver to avoid burring screw. After lever bushing (36) has been pushed out, lever may be lifted free from underside of receiver



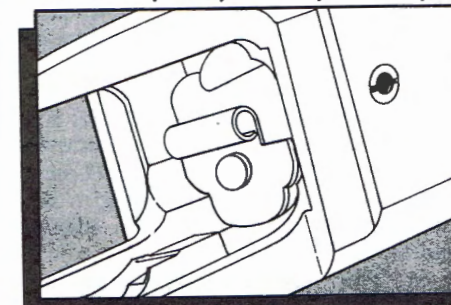
**3** Open action with a downward motion of lever (41). Breech bolt (16) may now be removed by sliding it slightly rearward and thence left. Automatic cutoff (14) and automatic cutoff spring (15) will fall out at this time. (Lever not shown in drawing for clarity)



**6** Remove sear screw nut (42) with a split-bladed screwdriver. Sear screw (9) and sear (40) may now be removed. It is not recommended that any of the carrier assembly be removed because of precise adjustment required to reinsert it



**7** Remove firing pin-hammer assembly from breech bolt and unscrew hammer bushing screw (21). Assembly may then be withdrawn from breech bolt. Caution: Hammer retractor spring (20) will drop out as the complete assembly is removed. When reassembling, insert firing pin-hammer assembly into breech bolt to within 3/8" of rear bolt face. sembling, insert firing pin-hammer assembly of the hammer assembly may be necessary to seat hammer retractor spring properly. When in place hammer assembly will easily slide in rest of the way and spring will bear on protruding lip (A) of hammer bushing (23). (Hammer shown partially cut away for clarity)



**8** Accomplish reassembly of Model 99 in reverse order. When reassembling, ensure that carrier spindle support (43) is properly seated in receiver. Although the support is not removed, it may turn out of alignment when sear screw and other parts are removed—





# Savage Model 110 Rifle

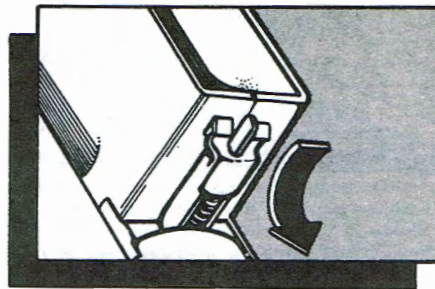
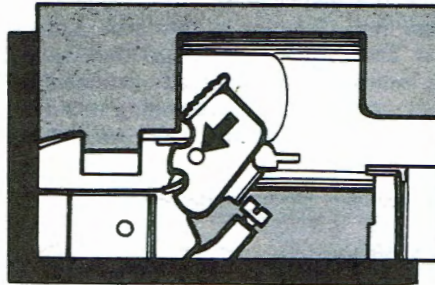
By Thomas E. Wessel

**T**HE Model 110 bolt-action high power sporting rifle, introduced early in 1958 by Savage Arms Corp., was designed for simplicity of manufacture. Initial chamberings were in cal. .30-'06 and .270 Winchester. Its basic Mauser-type action with staggered-column box magazine cocks on opening of the bolt and is noteworthy for its clean functional design, provisions for handling gas, and ease of disassembly. An integral sleeve in rear of the barrel chamber completely shrouds the bolt face to reinforce the receiver ring in case-head area. Face of the bolt is deeply counterbored to enshroud the case head. A gas port between the locking lugs vents interior of the bolt and aligns with gas port in the receiver ring. Opposite side of receiver ring is also vented for escape of gas. A double-lug front baffle on the bolt in rear of the front locking lugs blocks the locking lug slots in the receiver when bolt is closed. Rear of the bolt is capped by a large screw to prevent rearward escape of gas from interior of bolt.

The tang safety locks both bolt and trigger when engaged. By lifting bolt and then engaging safety, cartridges in the magazine can be functioned through the action and ejected without fear of accidental discharge. Another feature of interest is the cocking indicator on right side of receiver bridge which elevates automatically when action is cocked, but drops when rifle is discharged. Magazine capacity of the Model 110 is 4 rounds, but when a round is in the chamber, cartridge capacity is 5.

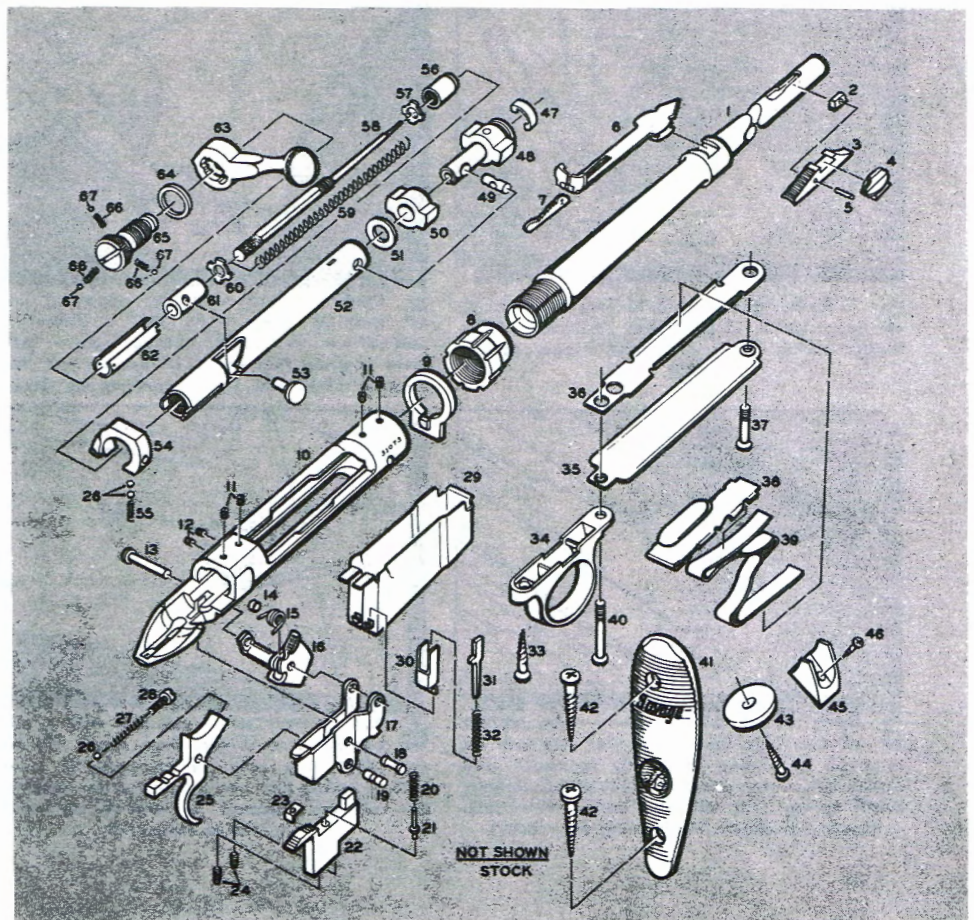
In late fall of 1958 a short-action version designated Model 110 MC was introduced. It was initially chambered for cal. .243 and .308 Winchester, and was mechanically identical to the Model 110 except for the slightly shorter action.

In 1959, left-hand versions of both short- and long-action models were announced under the designation of Model 110 MC-L. These versions were mechanically identical to corresponding right-hand models except for reversal of the bolt.

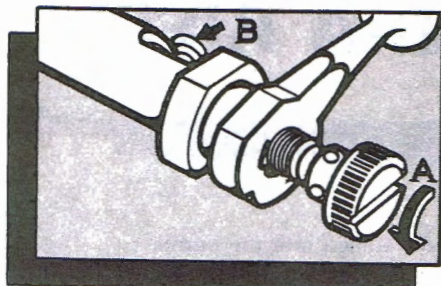


**1** Commence disassembly of Savage Model 110 by removing bolt assembly from receiver by depressing cocking indicator and holding back on trigger while withdrawing bolt assembly. Remove front and rear floorplate screws (37) and (40), which will permit the floorplate (35), floorplate insert (36), magazine follower (38), and magazine spring (39) to be lifted away from bottom of gun and complete barrel and receiver assembly to be lifted away from the stock. Continue by pushing out sear pin (13-arrow) from right to left. Pull down on front end of trigger bracket (17) and unhook back end from receiver (10). Sear (16), sear spring (15), and sear bushing (14) may be removed at this time. Disassembly of trigger mechanism is immediately apparent

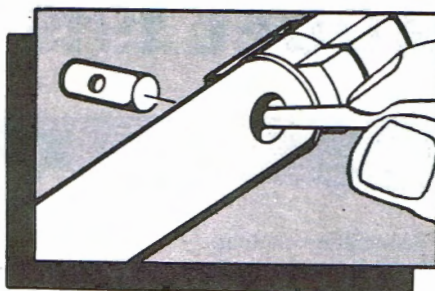
**2** To remove magazine box (29), push down and back on magazine latch (30), disengaging hooks on lower edge of magazine box. Ejector (31) and ejector spring (32) are removed concurrent with removal of latch. Pull magazine box back and lift front end up above receiver and push box forward and away



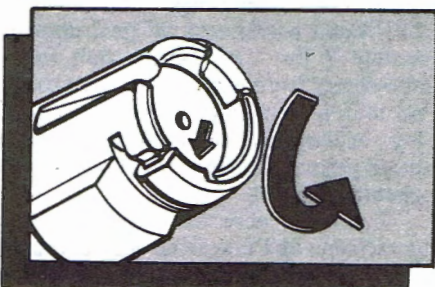




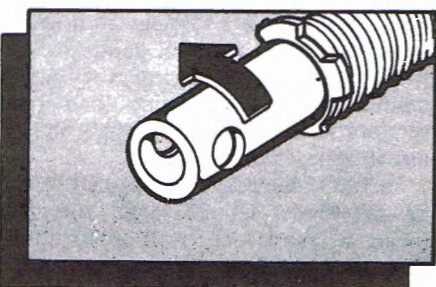
**3** Disassemble bolt group by (A) removing bolt assembly screw (65) using coin as a screwdriver. Cocking piece sleeve (62) will be withdrawn as screw is removed, and (B) cocking piece pin (53) will drop out of bolt together with firing pin unit, which will also drop out by tapping rear of bolt body (52). Remove bolt handle (63) and rear baffle (54)



**5** Next, drift out bolt head retaining pin (49) and lift bolt head (48), front baffle (50), and front baffle friction washer (51) away from bolt body (52)



**6** Remove extractor (47), using a small screwdriver, by exerting a slight pressure out and counterclockwise on opposite end (small arrow) from large extracting lip. Reassemble in reverse order. To replace bolt in receiver, it must first be cocked. Accomplish this by placing cocking piece pin (53) against the edge of a square block, pushing down and rotating counterclockwise. This operation can be avoided by assembling bolt with cocking piece pin in rear (cocked) position. Hold back on trigger when inserting bolt in receiver



**4** Remove mainspring (59) by unscrewing cocking piece (61) and removing cocking piece lockwasher (60). Do not disturb striker stop nut (56) as this nut is adjusted at the factory to give correct firing pin protrusion

#### Parts Legend

- |  |                                    |
|--|------------------------------------|
| 1. Barrel                              | 34. Trigger guard                  |
| 2. Front sight dovetail block          | 35. Floorplate                     |
| 3. Front sight base                    | 36. Floorplate insert              |
| 4. Front sight                         | 37. Floorplate screw, front        |
| 5. Front sight pin                     | 38. Magazine follower              |
| 6. Rear sight                          | 39. Magazine spring                |
| 7. Rear sight step                     | 40. Floorplate screw, rear         |
| 8. Barrel lock nut                     | 41. Buttplate                      |
| 9. Recoil lug                          | 42. Buttplate screw (2)            |
| 10. Receiver                           | 43. Pistol grip cap                |
| 11. Dummy screw, top (4)               | 44. Pistol grip cap screw          |
| 12. Dummy screw, side (2)              | 45. Bolt handle slot liner         |
| 13. Sear pin                           | 46. Bolt handle slot liner screw   |
| 14. Sear bushing                       | 47. Extractor                      |
| 15. Sear spring                        | 48. Bolt head                      |
| 16. Sear                               | 49. Bolt head retaining pin        |
| 17. Trigger bracket                    | 50. Front baffle                   |
| 18. Safety bearing pin                 | 51. Front baffle friction washer   |
| 19. Trigger pin                        | 52. Bolt body                      |
| 20. Trigger spring                     | 53. Cocking piece pin              |
| 21. Trigger spring plunger             | 54. Rear baffle                    |
| 22. Safety                             | 55. Rear baffle spring             |
| 23. Trigger pull adjusting screw cover | 56. Striker stop nut               |
| 24. Trigger pull adjusting screw (2)   | 57. Striker stop nut lockwasher    |
| 25. Trigger                            | 58. Firing pin                     |
| 26. 5/32" steel ball (3)               | 59. Mainspring                     |
| 27. Trigger pin retaining spring       | 60. Cocking piece lockwasher       |
| 28. Trigger engagement adjusting screw | 61. Cocking piece                  |
| 29. Magazine box                       | 62. Cocking piece sleeve           |
| 30. Magazine latch                     | 63. Bolt handle                    |
| 31. Ejector                            | 64. Bolt assembly screw washer     |
| 32. Ejector spring                     | 65. Bolt assembly screw            |
| 33. Trigger guard screw                | 66. Bolt assembly screw spring (3) |
|  | 67. 1/8" steel ball (3)            |

## A MAN TO REMEMBER

### CHRISTIAN SHARPS

*Developed sliding breech action*

Born—1811  
Washington, N. J.  
Died—1874  
Vernon, Conn.



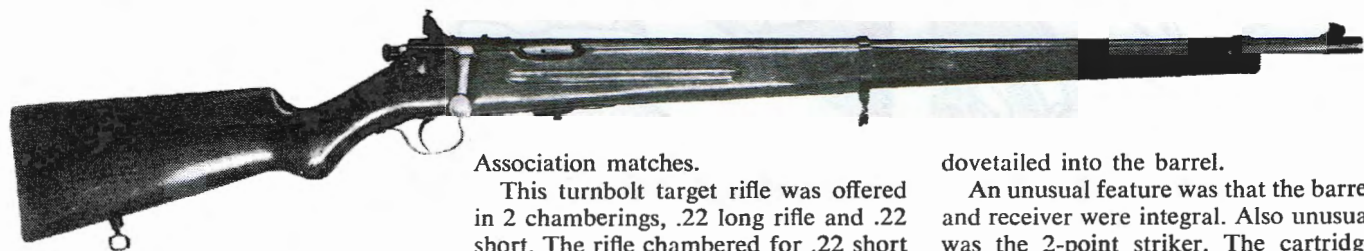
A talent for mechanics and an interest in firearms early determined that Christian Sharps would be a gunsmith. After a brief education in the public schools of his birthplace, he served an apprenticeship as a machinist and riflemaker. By the time he was 19 he was ready for greener fields and greater experience, and he journeyed to Harpers Ferry to work under Capt. John H. Hall and study the manufacture of his rifle, the first firearm made with completely interchangeable parts.

Sharps' keen mind soon detected shortcomings in the Hall rifle which he felt he could correct. When the shops at Harpers Ferry closed about 1844, Sharps moved to Cincinnati, Ohio, and while living there was granted his basic breech-loading patent in 1848. This patent covered a vertically sliding breechblock which moved in a mortise cut through the receiver. It was activated by movement of the trigger guard, which was pivoted at the front and thus formed a lever. It was an exceptionally strong and simple mechanism, and the soldiers who used it during the Civil War were unanimous in acclaiming it the best single-shot breech-loader in the service. This breech has continued to be popular in modern times as the basis for such single-shot rifles as the Winchester, Stevens, and Farquharson.

Sharps arms, including rifles, carbines, and pistols, were manufactured by a number of different companies. Sharps himself worked actively with A. S. Nippes of Mill Creek, Pa., in 1850, and Robbins & Lawrence of Hartford, Conn., in 1852. In 1853 Sharps left the Hartford Armory and moved to Philadelphia where he concentrated on the manufacture of pistols of several types, including the famous 4-barrel models. For a brief period, 1863-1867, he made the famous Sharps & Hankins carbines and rifles. In 1871 Sharps ceased active firearms making and retired to Vernon, Conn., to relax and experiment with the artificial breeding of trout.—HAROLD L. PETERSON



# SAVAGE MODEL 1919 NRA RIFLE



By DENNIS RIORDAN

**B**OLT-ACTION rifles were not very popular in the U.S. until World War I when a large number of soldiers used M1903 Springfield and M1917 Enfield Service rifles and acquired a liking for this type of arm. Following the war, U.S. arms manufacturers introduced several models of commercial bolt-action rifles to meet popular demand. One of these rifles, the Savage Model 1919 NRA, was of military style with a long fore-end. NRA in the designation was explained in Savage literature merely by mention that the rifle was suitable for firing from various standard positions incorporated in National Rifle

Association matches.

This turnbolt target rifle was offered in 2 chamberings, .22 long rifle and .22 short. The rifle chambered for .22 short was made on special order in very limited quantity and is thus rare.

In both chamberings, the rifle had a 25" round barrel and weighed approximately 7 lbs. The 2-piece bolt had a non-rotary front part; and the bolt handle on the rear portion served as a locking lug. A knurled knob on the cocking piece permitted manual cocking without opening the bolt.

Cartridges were fed from a 5-round detachable box magazine with a knurled knob on the bottom to facilitate handling. The thumb-operated safety was on the right of the action behind the bolt handle. An aperture rear sight with screw adjustments for windage and elevation was mounted on the upper rear of the action, and the front sight was

dovetailed into the barrel.

An unusual feature was that the barrel and receiver were integral. Also unusual was the 2-point striker. The cartridge rim was struck in 2 positions to aid reliable ignition.

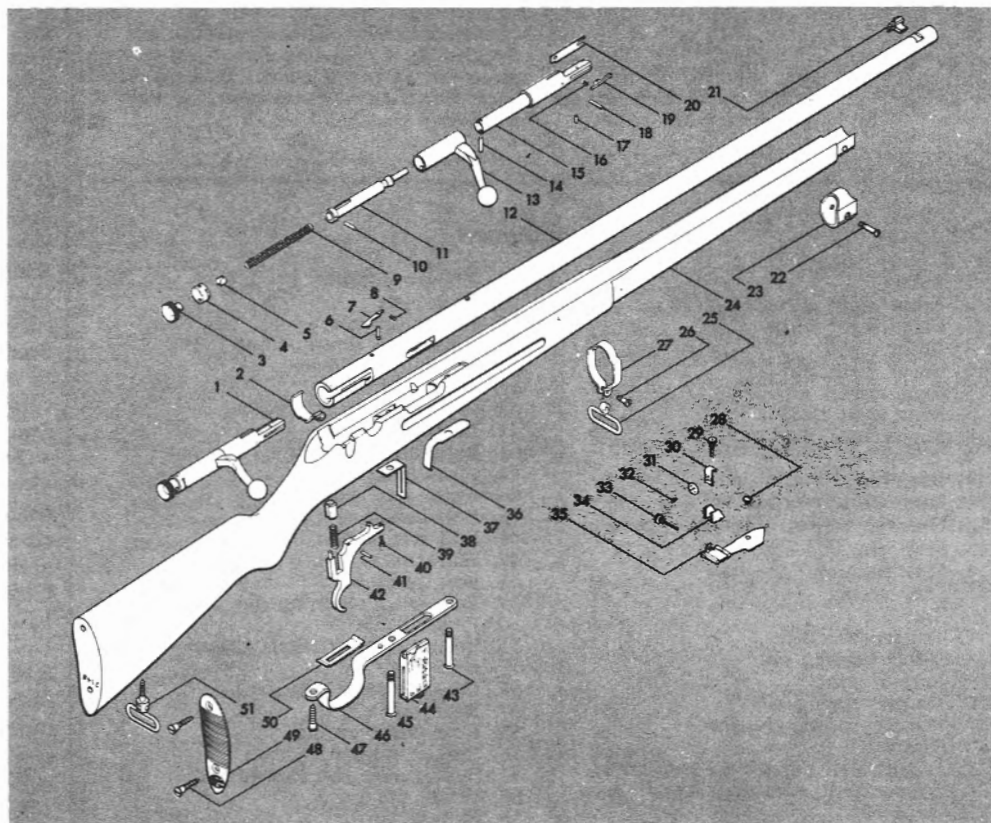
Of one-piece design, the oil-finished walnut stock with pistol grip was fitted with a steel buttplate. Also provided were 1 1/4" sling swivels, 2 military-style barrel bands, and grasping grooves in the fore-end.

A later version or style of this rifle with serial numbers ranging from 25000 to 45000 had a single-point striker, twin-extractors, and several other action modifications. The original and later versions were essentially alike in external appearance, however.

In 1933, this rifle was replaced by the Savage Model 19 .22 target rifle featuring a speed lock, well-proportioned half stock and other improvements.

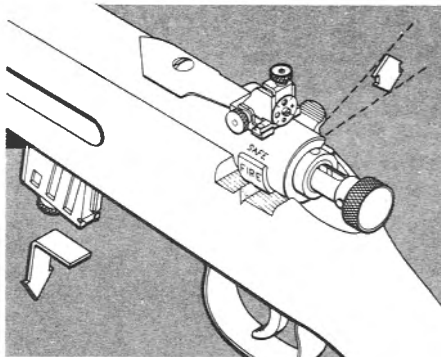
## Parts Legend

1. Bolt, assembled
2. Safety
3. Cocking piece head
4. Bolt sleeve retaining collar
5. Mainspring bushing
6. Ejector pin
7. Ejector
8. Ejector spring
9. Mainspring
10. Cocking piece pin
11. Cocking piece (hammer)
12. Barrel
13. Bolt sleeve
14. Bolt pin
15. Bolt head
16. Extractor spring
17. Extractor pin
18. Firing pin stop pin
19. Extractor
20. Firing pin
21. Front sight
22. Front barrel band screw
23. Front barrel band
24. Stock
25. Middle barrel band swivel
26. Middle barrel band screw
27. Middle barrel band
28. Rear sight base screw
29. Elevation screw
30. Elevator
31. Aperture disc
32. Aperture disc screw
33. Windage screw
34. Windage yoke
35. Rear sight base
36. Magazine retainer, front
37. Magazine retainer, rear

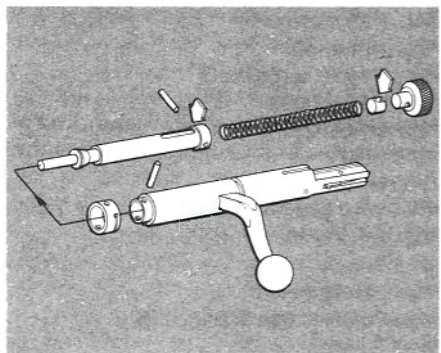


38. Trigger spring box
39. Trigger spring
40. Trigger adjusting screw
41. Trigger pin
42. Trigger
43. Takedown screw, front
44. Magazine assembly
45. Takedown screw, rear
46. Trigger guard
47. Trigger guard screw
48. Buttplate screw (2)
49. Buttplate
50. Trigger plate
51. Stock swivel assembly

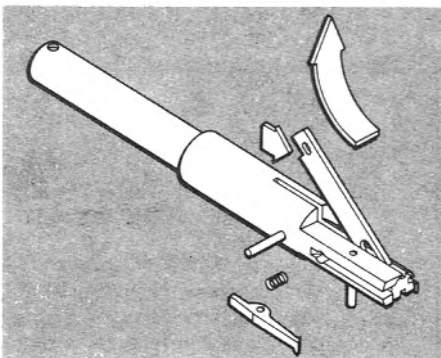




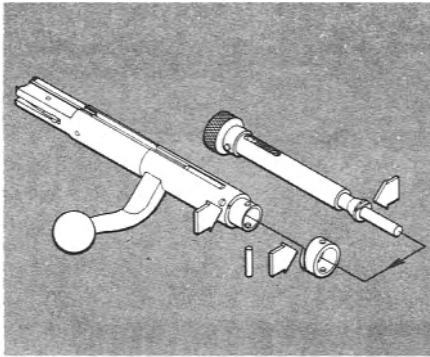
**1** Lift thumbpiece of safety (2) to put rifle on safe. Depressing the thumbpiece disengages safety, and the word "FIRE" on left of safety is exposed. Remove magazine (44) by pressing knurled knob on its base forward and down. To remove bolt (1), disengage safety and pull bolt fully to the rear; then, pull trigger (42) and remove bolt.



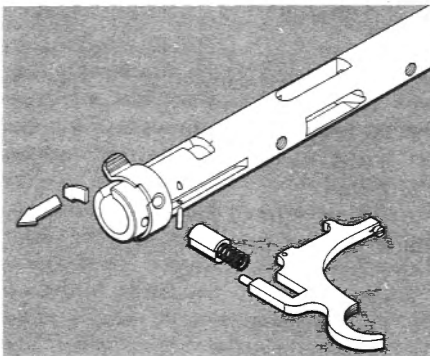
**2** Disassemble bolt by drifting out bolt pin (14). Cocking piece (11), bolt sleeve retaining collar (4), and bolt sleeve (13) slide off to rear. Strip cocking piece by drifting out cocking piece pin (10). Hold cocking piece head (3) tightly while withdrawing the punch, as head is under spring tension. Ease off cocking piece head, mainspring bushing (5), and mainspring (9). Notch (arrow) in mainspring bushing must align with slots (arrow) in cocking piece when these parts are reassembled.



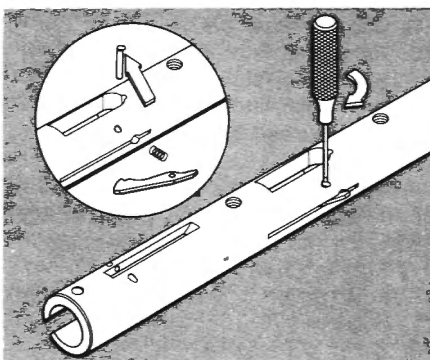
**3** Drift out extractor pin (17) to release extractor (19) and extractor spring (16). Drift out firing pin stop pin (18), and lift firing pin (20) out of bolt head. Small notch (arrow) at rear of firing pin must face toward bottom of bolt on replacement.



**4** In reassembling the bolt, align the slots on the underside of bolt head and bolt sleeve. Replace bolt sleeve retaining collar so that the tip (arrow) of its integral spring seats in the small notch (arrow) on rear face of bolt sleeve. Before inserting cocking piece, align sear notch (arrow) with slots in bolt head and sleeve. A tapered punch is useful in lining up holes for replacement of bolt pin.

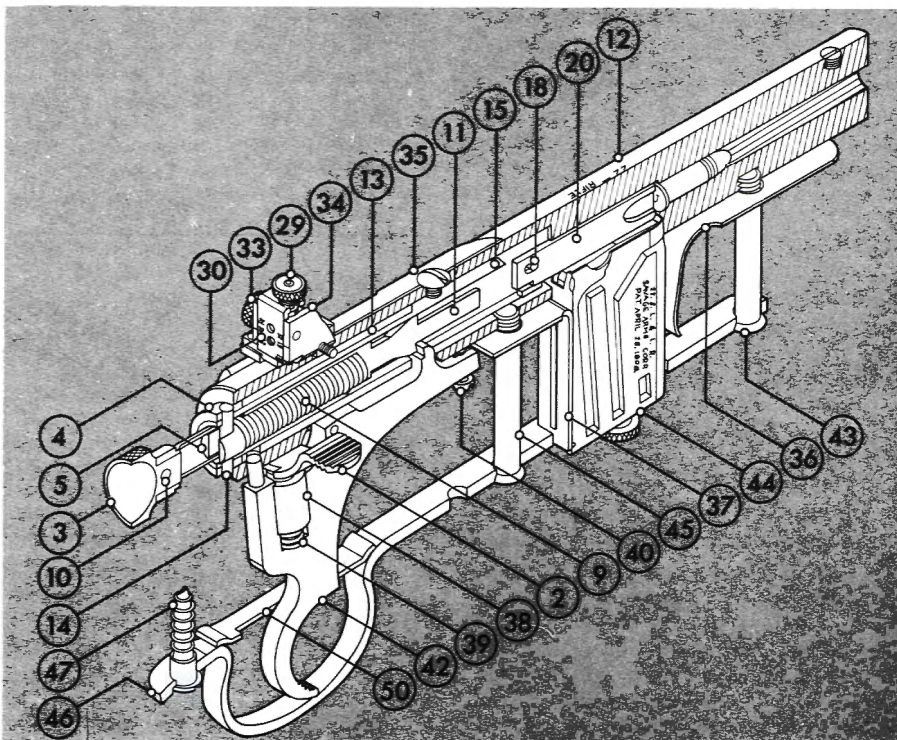


**5** Remove front barrel band screw (22), loosen middle barrel band screw (26), and slide the bands (23, 27) forward off the barrel. Remove front and rear takedown screws (43, 45) and lift barrel out of stock. Drift out trigger pin (41) to remove trigger (42), trigger spring box (38), and trigger spring (39). Turn safety counterclockwise until its thumbpiece aligns with top of bolt handle cut in barrel extension. Slide safety off to rear.

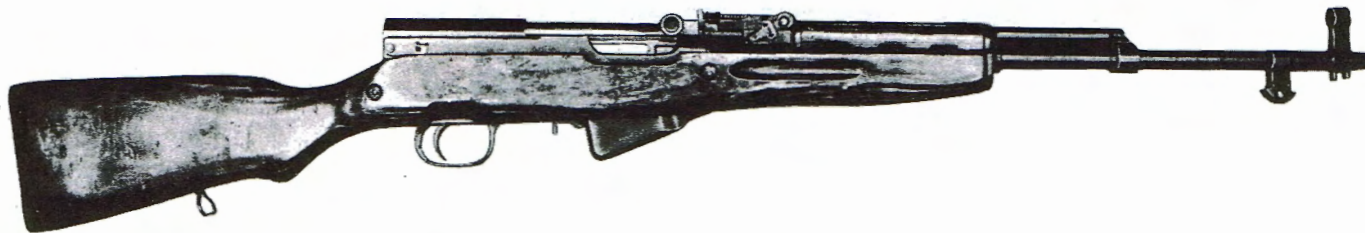


**6** Ejector pin (6) is loosely fitted in a blind hole in barrel extension. Remove by turning L-shaped head of pin outward with a jeweler's screwdriver. Exposed head of pin provides a purchase for the thumbnail. It is pried out, releasing ejector (7) and ejector spring (8).

Cutaway shows relationship between the assembled parts. Rifle is loaded and cocked, safety disengaged. Parts are number keyed to the parts legend.







# SIMONOV 7.62 MM. CARBINE

By EDWARD J. HOFFSCHMIDT

**T**HE Russians have used several models of semi-automatic rifles and carbines. They adopted the Simonov rifle in 1936 and the Tokarev rifle in 1938. The Tokarev was used extensively during World War II, but did not prove entirely satisfactory. Shortly after the war, the Simonov carbine was adopted.

The Simonov carbine (also called SKS, standing for Self-Loading Carbine Simonov) is one of 3 Russian weapons using the 7.62 mm. M1943 short rimless cartridge. Gas-operated, it has a fixed 10-round box magazine and a permanently attached folding bayonet. When it is fired, gas is tapped through a port in top of barrel, and pushes a piston and piston extension rearward. The extension actuates the bolt carrier, which cams rear of bolt upward for unlocking.

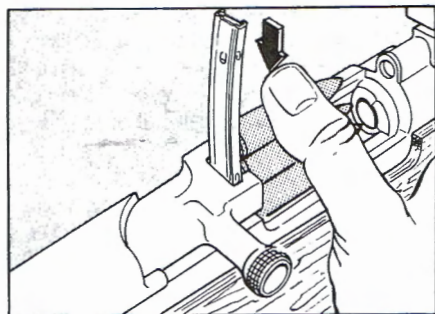
This carbine is relatively easy to field strip and maintain, and it functions reliably. It is considered to be effective up to about 400 meters.

The SKS is an excellent weapon and widely used in the Communist nations, but is being replaced by the 7.62 mm. AK assault rifle that better meets tactical requirements of the Russians.

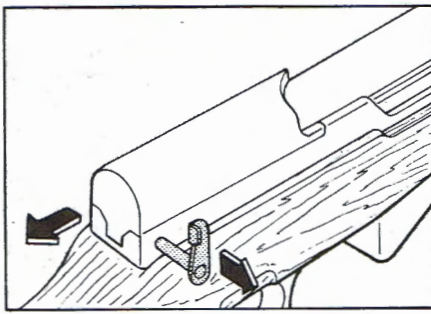
## Parts Legend

1. Piston
2. Handguard and gas cylinder
3. Piston extension
4. Piston return spring
5. Front sight
6. Front sight seat
7. Handguard catch
8. Bayonet screw
9. Bayonet assembly
10. Hold open latch pin
11. Hold open latch spring
12. Hold open latch
13. Receiver and barrel assembly
14. Takedown latch
15. Trigger guard latch
16. Latch pin
17. Rear housing
18. Bolt carrier
19. Bolt
20. Firing pin retainer
21. Firing pin
22. Extractor spring
23. Extractor
24. Recoil spring
25. Spring retainer
26. Large spring guide

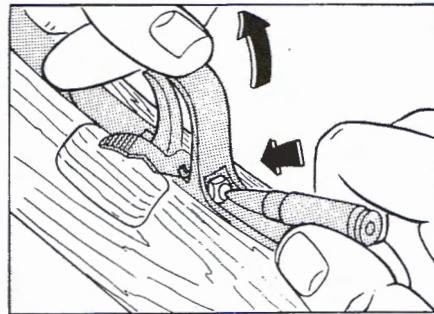
27. Small spring guide
28. Stock assembly
29. Trigger guard spring
30. Magazine
31. Magazine follower
32. Follower spring
33. Hinge pin
34. Magazine cover
35. Cover latch
36. Latch spring and sear spring
37. Sear
38. Latch stop pin
39. Trigger guard
40. Disconnecter hinge pin
41. Trigger pin
42. Safety catch
43. Safety catch spring
44. Trigger
45. Safety catch pin
46. Trigger bar
47. Trigger bar pin
48. Trigger spring
49. Disconnecter
50. Rebound disconnecter
51. Hammer
52. Hammer strut pin
53. Hammer strut
54. Hammer spring
55. Cleaning rod



**1** The SKS has a fixed box magazine (30). To load, open action by pulling back bolt carrier (18). Insert a loaded stripper clip into clip guides of bolt carrier, and push cartridges down into magazine as shown. The magazine can also be loaded with loose cartridges.



**2** To field strip, clear the chamber and unload magazine. Depress follower (31) and ease bolt closed. Swing takedown latch (14) up and pull out. Ease rear housing (17) off. Pull out recoil spring assembly (24-27). Pull bolt carrier (18) and bolt (19) to rear and remove.



**3** For further disassembly, cock hammer and put carbine on safe. Turn carbine upside-down and push in on trigger guard latch (15) with cartridge nose or punch. When latch is pushed in sufficiently, the trigger guard (39) should jump out slightly. Guard can then be pulled free.



# A MAN TO REMEMBER

EZEKIEL BAKER

*Made the Baker Rifles*

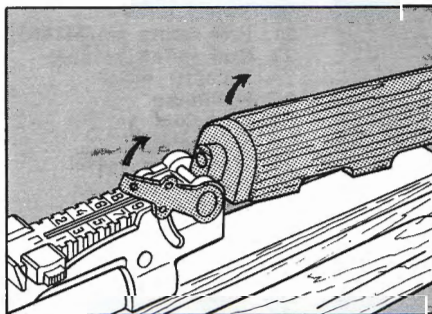
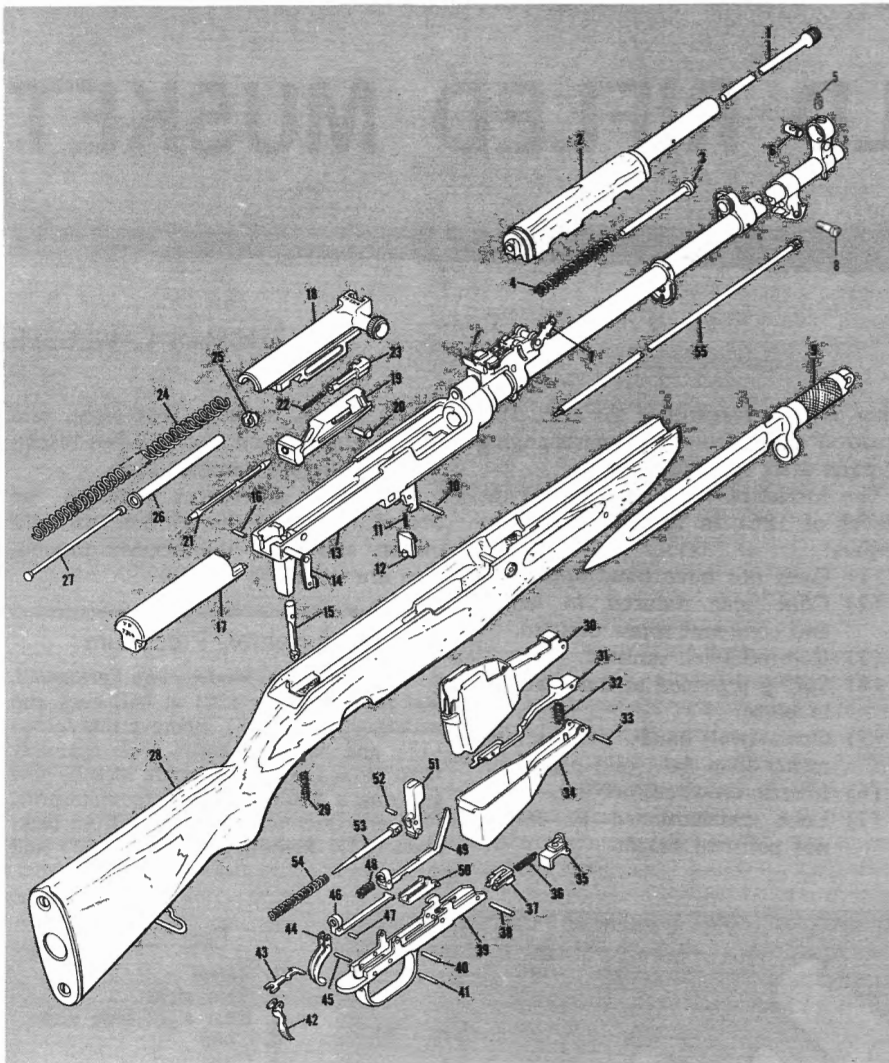
*Born—1758*

*Died—1836*

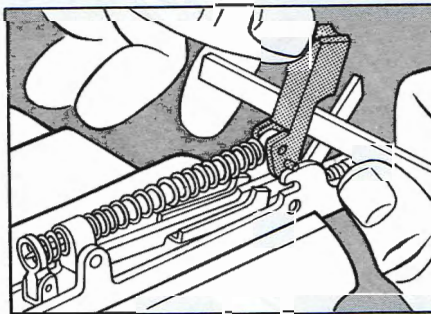
MUCH of Ezekiel Baker's early life remains a mystery today. As yet it has even been impossible on this side of the Atlantic to find a record of his birth. It is known, however, that he served his apprenticeship under the celebrated gunsmith Henry Nock and that he opened his own shop at 24 Whitechapel Rd., London, in 1775. Here he produced under contract a number of muskets, rifles, carbines, and pistols for the British government and for the British East India Company. He also did much custom gunsmithing and held the royal warrant as Gunmaker to His Majesty George III.

Baker is remembered best by collectors today for 2 things, the famous Baker military rifles and his book *Remarks on Rifle Guns*. He obtained his military rifle contract as the result of a competition at Woolwich Arsenal on Feb. 4, 1800, in which his rifle won over those of a number of European and American gunsmiths. Baker's rifle was not the most accurate of the weapons tested, but it was selected because it was easier to load and maintained a reasonably flat trajectory, both of which factors were considered highly desirable for a military weapon. Baker's rifles were issued to the 95th Regiment, later called the Rifle Brigade, which thus became the first line troops in the British Army to have rifles as regulation equipment.

Baker also made several contributions to the development of gunnery. In 1821 he patented a new bullet mold and clipper. In 1822 he improved the jaws of the flint cock so that they would grip the flint more securely; and finally in 1824 he developed a lock that could be used for either flint or percussion with the proper adapters.—HAROLD L. PETERSON



**4** Insert point of cartridge into hole of the handguard catch (7) and rotate catch up as shown in illustration. Lift up rear of handguard (2), and pull it free of barrel. Then push piston (1) out of gas cylinder. Pivot bayonet (9) to middle position, and remove cleaning rod (55).



**5** To strip trigger guard, place in padded vise. Push down on disconnecter (49) and pull trigger (44) to release hammer. [Use care; hammer is under heavy spring pressure.] Use metal bar as shown to force hammer out. Remaining parts can be disassembled by driving out pins. ■



# MODEL 1861 SPRINGFIELD RIFLED MUSKET



By THOMAS E. WESSEL

A total of 265,129 cal. .58 Model of 1861 Springfield rifled muskets were produced at Springfield Armory and this arm was also the pattern for civilian contractors furnishing muskets to the government. It is quite similar to the Model of 1863, and there is a high degree of parts interchangeability between these models. A total of 273,265 Model of 1863 rifled muskets were produced at Springfield Armory.

## Date not correct

Present-day collectors are often hard put to determine the exact model at hand as the date on the lockplate is not always correct when compared with

other parts or features of the arm. This situation stems from the interchanging of parts after manufacture.

The Model of 1863 differs from the Model of 1861 in the following particulars:

- (1) Does not have band springs.
- (2) Cone seat reduced in length and cone-seat screw omitted.
- (3) Ramrod swell omitted.
- (4) Spring provided to hold ramrod in place.
- (5) Open oval bands with screws rather than flat, solid bands.
- (6) Muzzle crowned, not flat.
- (7) Lock casehardened in colors, not polished bright.

(8) Bands, swivels, rear sight, and guard blued, not polished bright.

(9) Different hammer form.

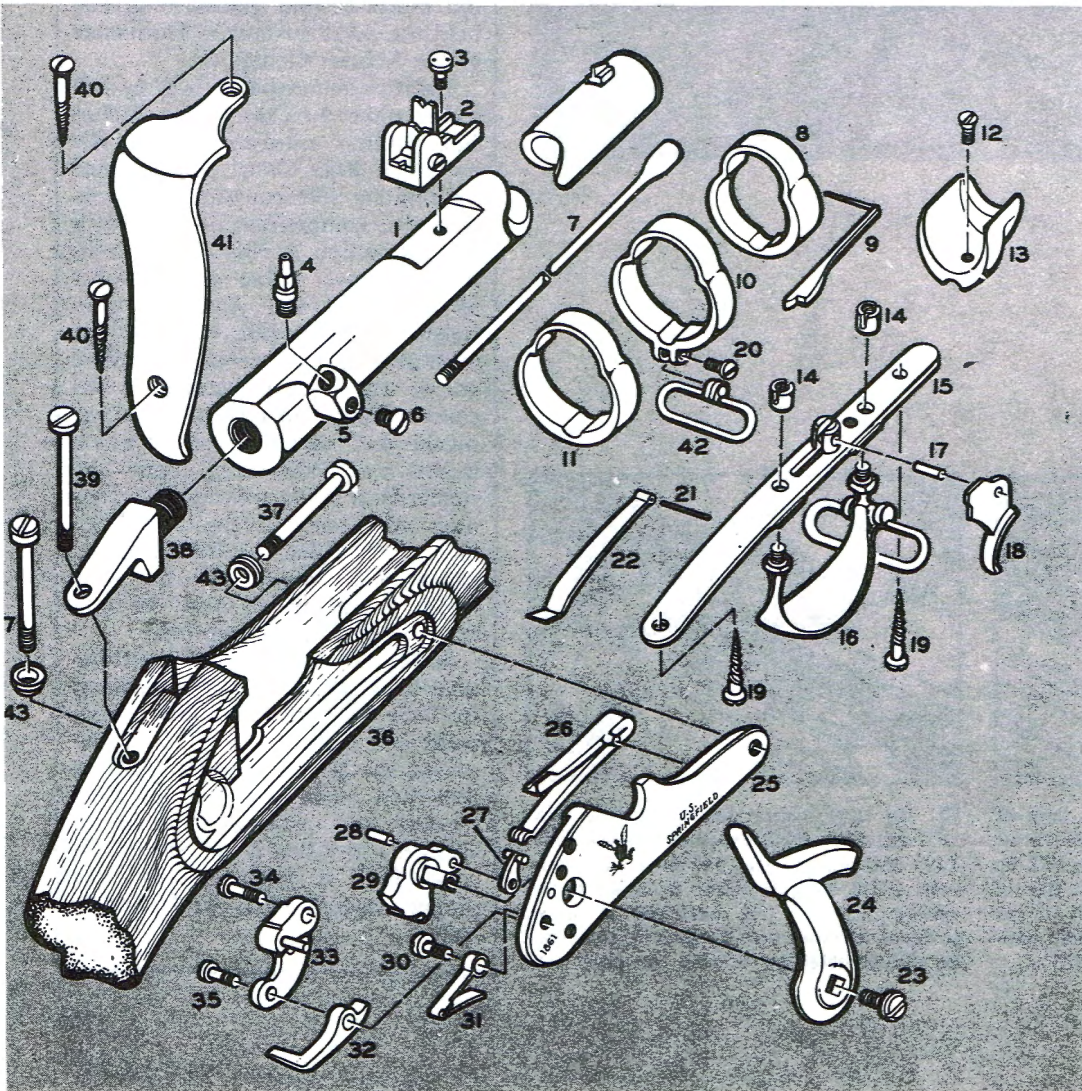
In effect, differences between the Model 1861 and the Model 1863 are minor, and basic disassembly procedures are therefore similar.

## Disassembly Procedure

To disassemble Model 1861 Springfield, first place hammer (24) at half cock and withdraw ramrod (7). Remove side screws (37) and separate entire lock assembly from stock (36). Disassemble lock by first applying a mainspring vise to mainspring (26) and then unseating spring from lockplate (25). Remove sear screw (35) and

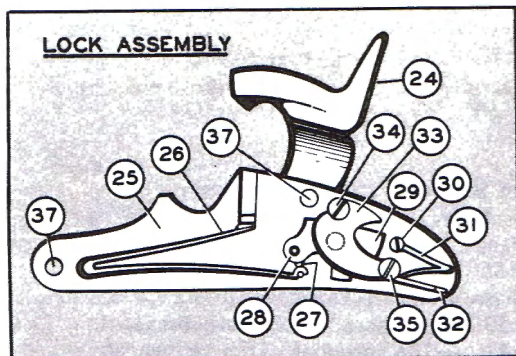
## Parts Legend

1. Barrel
2. Rear sight
3. Rear sight base screw
4. Cone
5. Cone seat
6. Cone-seat screw
7. Ramrod
8. Upper band
9. Band spring (3)
10. Middle band
11. Lower band
12. Tip screw
13. Tip
14. Guard nut (2)
15. Guard plate
16. Guard bow
17. Trigger pin
18. Trigger
19. Guard plate screws (2)
20. Swivel screw
21. Rod spring pin (M1863)
22. Rod spring (M1863)
23. Hammer screw
24. Hammer
25. Lockplate
26. Mainspring
27. Mainspring swivel
28. Tumbler pin
29. Tumbler
30. Sear spring screw
31. Sear spring
32. Sear
33. Bridle
34. Bridle screw
35. Sear screw
36. Stock (partial)
37. Side screw (2)
38. Breech screw
39. Tang screw
40. Buttplate screw (2)
41. Buttplate
42. Front swivel
43. Side screw washer (2)

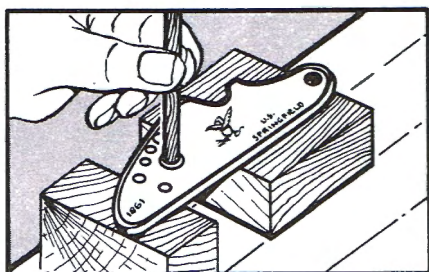




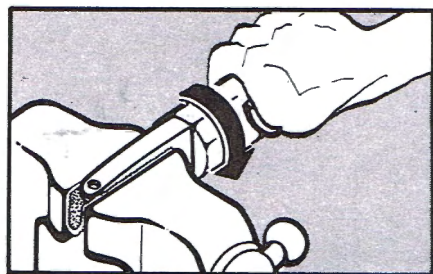
sear (32) will drop away. Remove bridle screw (34) and bridle will drop away. Next, remove hammer screw (23) and hammer (24). Remove sear spring screw (30) and sear spring (31). Tap tumbler (29) out from exterior of lockplate [see Panel 2]. Continue by removing tang screw (39). Depress band spring (9) for each of the upper, middle, and lower bands (8), (10), and (11) and remove bands. Separate barrel (1) from stock.



**1** Diagram shows interior assembly of lock and relative position of parts, and may also be used as a guide for most of the Springfield percussion arms as well as contract muskets of the period



**2** Removal of the tumbler (29) may be facilitated by placing the lockplate (25), face up, on 2 blocks of wood and centering a hardwood dowel over tumbler flange. Tap dowel lightly with hammer



**3** Removal of breech screw (38) is accomplished as follows: Place parallel sides of breech screw in felt-padded vise jaws and attempt to unscrew barrel by hand. If this part is rusted in place, apply a good grade of penetrating oil for several days and try again. A good grip on the barrel may be had with use of rubber gloves. *Never* use a pipe wrench or similar device on barrel as this will mar it ■

## FAMOUS FIREARMS

# Creedmoor Rifle

A Creedmoor rifle is a single-shot long-range target rifle designed to be fired from a prone or supine position without artificial support. The name derives from the famous rifle range at Creedmoor, Long Island, designed and built under the auspices of the newly formed National Rifle Association in 1872.

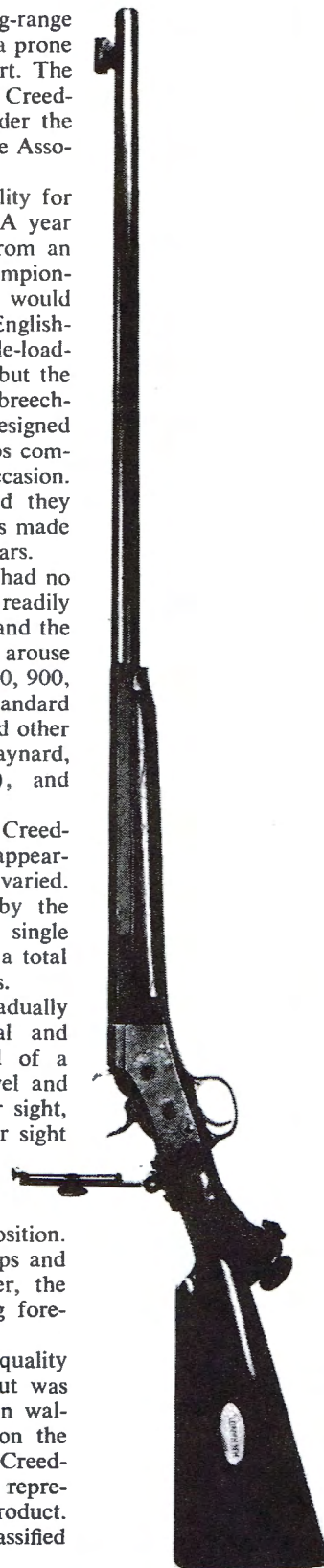
The Creedmoor range was the first facility for long-range shooting in the United States. A year after it was finished a challenge arrived from an Irish rifle team which had just won the championship of the British Isles for a match which would ostensibly carry the championship of the English-speaking world. The Irish team used muzzle-loading rifles made by John Rigby of Dublin, but the U. S. team established a precedent by using breech-loaders. These rifles had been especially designed for the match by the Remington and Sharps companies, each producing 4 rifles for the occasion. They were the first Creedmoor rifles, and they served as models for long-range target rifles made by several U. S. firms in the following years.

Before the Creedmoor Match, the U. S. had no special models of long-range target rifles readily available. The U. S. victory in the contest and the attendant newspaper publicity tended to arouse interest in the sport of target shooting at 800, 900, and 1000 yds. Creedmoor rifles became standard models for both Sharps and Remington, and other leading manufacturers including Ballard, Maynard, Providence Tool Co. (Peabody-Martini), and Frank Wesson.

Despite the number of manufacturers, Creedmoor rifles were remarkably uniform in appearance. It was primarily the action which varied. All conformed to the rules formulated by the National Rifle Association which required single triggers with not less than a 3-lb. pull and a total weight for the rifle of not more than 10 lbs.

These rifles were graceful, and had gradually tapering barrels, usually partly octagonal and partly round. The usual sights consisted of a hooded front sight, often with a spirit level and wind gauge, and a long-range Vernier rear sight, also often adjustable for windage. The rear sight was mounted either on the tang of the action or on the top rear of the butt, depending on whether the shooter preferred to fire from a prone or supine position. Most stocks had finely checkered pistol grips and relatively short slender forearms. However, the military Creedmoor models possessed long forearms. Cal. .44 was standard.

Because the Creedmoor rifle was a high-quality precision rifle, the workmanship throughout was generally fine. Stocks were often Circassian walnut, and there was frequently engraving on the action. A few rifles were even marked "Creedmoor", and in these instances they usually represented the top quality of a manufacturer's product. Lesser models of the same type were just classified as "Long Range".—HAROLD L. PETERSON







# Springfield

## Model 1873 .45-70 Rifle

By James M. Triggs

**D**URING the latter part of the Civil War, Brig. Gen. A. B. Dyer, Chief of Ordnance, commissioned Erskine S. Allin, master armorer at Springfield Armory, to develop a breech mechanism to permit economical conversion of cal. .58 muzzle-loading percussion rifles to breech-loaders using a self-contained metallic cartridge. Recognizing the importance of this conversion, Dyer specifically instructed Allin

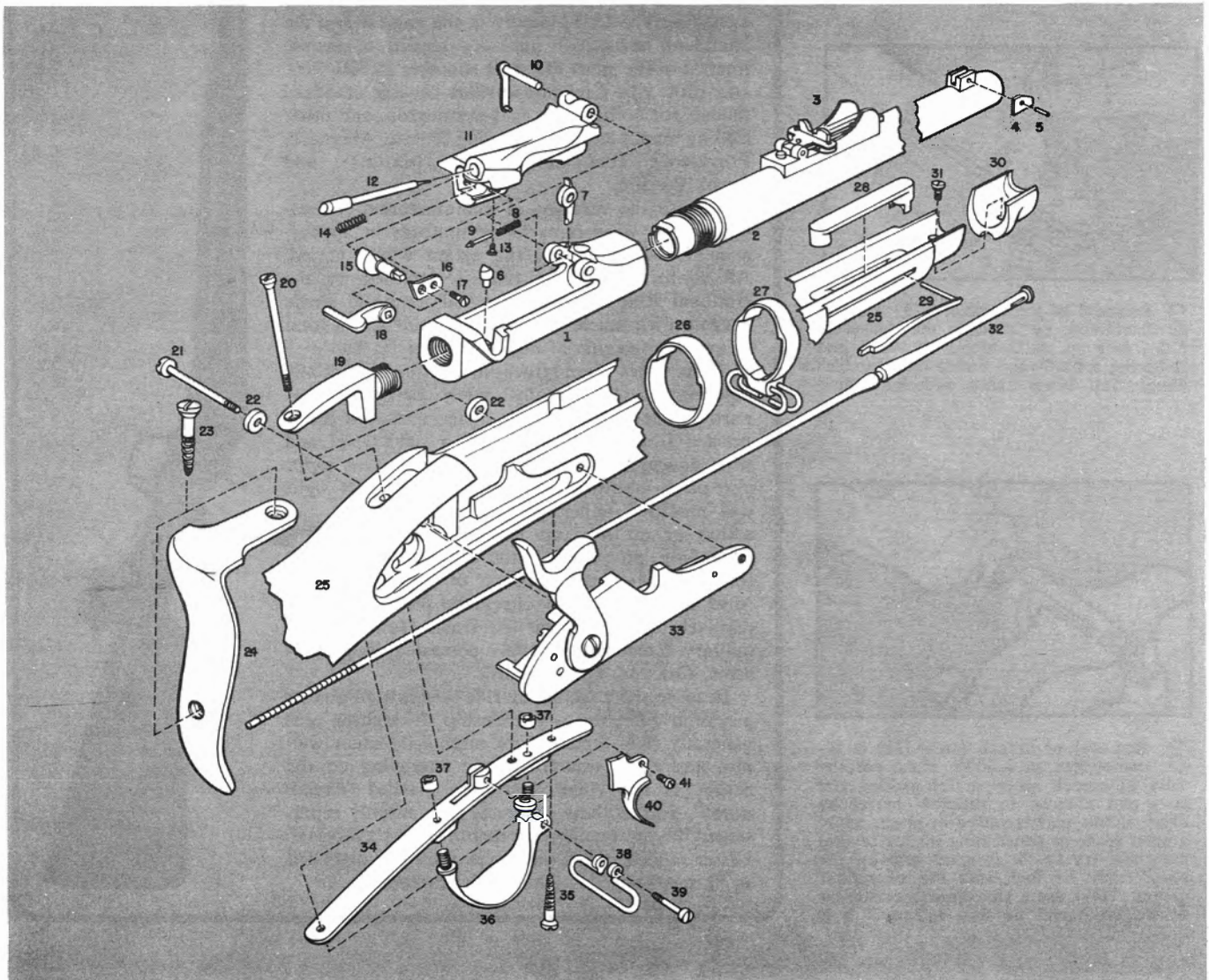
to make use of any existing ideas regardless of who held the patents.

Allin accomplished the assigned task and, without the knowledge of Dyer, obtained, on Sept. 19, 1865, U. S. Patent No. 49,959 covering his breech mechanism which was subsequently selected by the Ordnance Board of 1865. The U. S. Government paid claims totaling \$124,341 to various inventors holding patents infringed by various features

of the Allin breech mechanism.

Many modifications were eventually made before the design of the Model 1866 rifle was approved. The cal. .58 barrels were reamed out to accept cal. .50 rifled liners which were brazed in place. The original Allin conversion made in 1865 was chambered for a cal. .58 rimfire cartridge.

The cal. .50 center-fire cartridge developed for use in the Model 1866





was loaded with 70 grs. blackpowder behind a 450-gr. pointed lead bullet. The Model 1868, subsequently produced, was largely made with new steel barrels rather than relined barrels.

The Cadet model was designated as the Model 1869.

The Model 1870 was similar to the Model 1868 except for changes in receiver, barrel, breechblock, and sights. It was manufactured in both rifle and carbine form.

The Services were apparently dissatisfied with performance of the Model 1870 and the .50-70 Government cartridge. An Ordnance Board was convened in 1872 to "consider and recommend for adoption of a breechloading system for muskets and carbines for the military service".

Examined by this board was a total of 99 American and 9 foreign breech-loading arms, including several modifications of the Allin system. Their choice was rifle No. 99 submitted by Springfield Armory. The breech mechanism of this rifle was based upon the Allin system. Upon adoption, the new rifle was designated Model 1873. It was chambered for a cal. .45 center-fire rifle cartridge loaded with 70 grs. blackpowder and a 405-gr. bullet. The carbine cartridge was loaded with 55 grs.

blackpowder and a 405-gr. bullet. The steel barrel was rifled with 3 grooves, with twist rate of one turn in 22".

The Model 1873 was made in regulation, cadet, and carbine sizes and remained the basic U. S. Service arm until superseded by the Krag-Jorgensen repeating rifle in 1892. Numerous changes were made during this period of manufacture. These included modifications in the breechblock, receiver gas-escapes, sights, and firing pin.

Subsequent models produced included the Model 1875 Officers Model rifle, the Model 1877 Carbine, and the Model 1884 Rifle, Carbine, and Cadet rifle. The Model 1888 Rifle adopted in 1889 was equipped with a rod bayonet similar to that used on the first 1903 cal. .30 Springfield rifles.

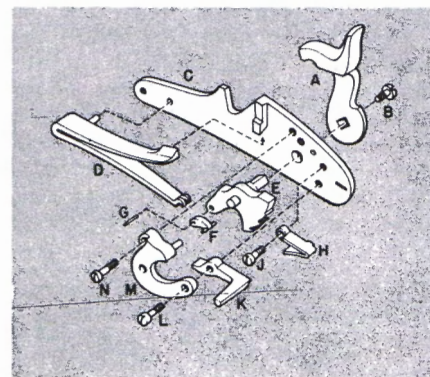
In addition to the regularly issued Service rifles and carbines, there were several experimental types or special-purpose arms (using the basic 1873 action) produced at Springfield Armory from 1873 until manufacture of cal. .45 rifles and carbines was discontinued in June 1893. In this category are 20-ga. shotguns, sharpshooters' or marksmen's rifles, short rifles, rod-bayonet rifles, and a special lot of cal. .30 rifles used in development of smokeless powder cartridges.

#### DISASSEMBLY PROCEDURE

Remove ramrod (32) and tang screw (20). Pull hammer to half-cock and remove 2 side screws (21). Remove lock assembly from stock. Press in on band springs (29) and slide off both upper and lower bands (26-27). Barrel and breech assembly can now be removed from buttstock (25).

To disassemble breech assembly, remove hinge pin (10) and withdraw breechblock assembly (11). Take care to prevent compressed ejector spring (8), spindle (9), and extractor (7) from escaping. Remove breechblock cap screw (17) and remove cam latch (15) with thumbpiece (18) and breechblock cap (16) together. Remove cam latch spring (14). Firing pin (12) is removed by unscrewing firing pin screw (13) from underside of breechblock.

Trigger mechanism in trigger guard, buttplate, stock tip, and remaining stock parts are easily removed for repair or replacement of parts. Reassemble rifle in reverse order.



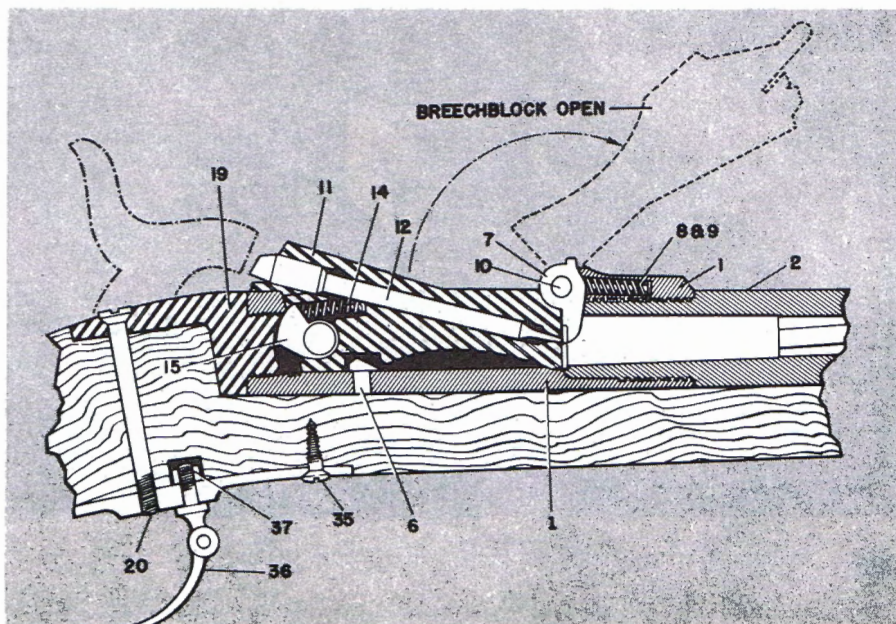
To disassemble lock mechanism, compress mainspring (D) with a Springfield or other suitable mainspring vise or heavy pliers and remove from lockplate (C). Remove sear spring screw (J) and sear spring (H) from lockplate. Remove sear screw (L) and sear (K). Remove bridle screw (N) and bridle (M). Remove tumbler screw (B) from hammer (A). Tumbler (E) may be driven from its seat in hammer with a large punch or brass drift pin. Reassemble lock in reverse order.

#### Parts Legend

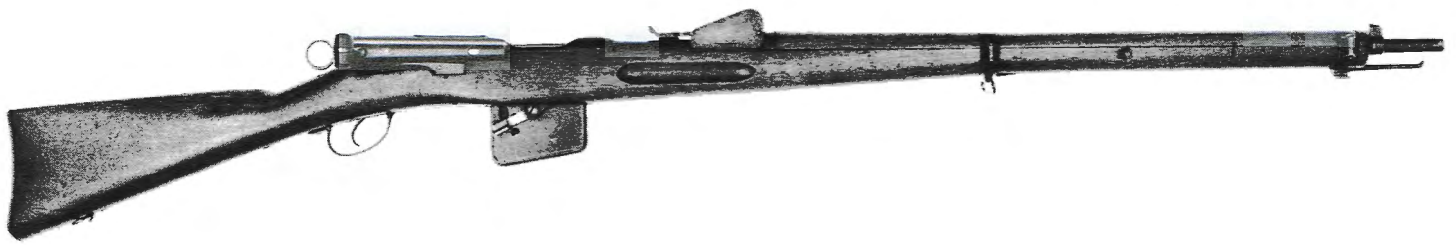
1. Breech
2. Barrel
3. Rear sight assembly
4. Front sight blade
5. Front sight pin
6. Ejector stud
7. Extractor
8. Ejector spring
9. Spindle
10. Hinge pin
11. Breechblock
12. Firing pin
13. Firing pin screw
14. Cam latch spring
15. Cam latch
16. Breechblock cap
17. Breechblock cap screw
18. Thumbpiece
19. Breechblock
20. Tang screw
21. Side screws (2)
22. Side screw washers (2)
23. Buttplate screws (2)
24. Buttplate
25. Buttstock (shown partially)
26. Lower band
27. Upper band
28. Ramrod stop
29. Band springs (2)
30. Stock tip
31. Stock tip screw
32. Ramrod
33. Lock assembly
34. Guard plate
35. Guard screws (2)
36. Guard bow
37. Guard bow nuts (2)
38. Guard bow swivel
39. Guard bow swivel screw
40. Trigger
41. Trigger screw

- |                          |              |
|--------------------------|--------------|
| A. Hammer                | } Lock parts |
| B. Tumbler screw         |              |
| C. Lockplate             |              |
| D. Mainspring            |              |
| E. Tumbler               |              |
| F. Mainspring swivel     |              |
| G. Mainspring swivel pin |              |
| H. Sear spring           |              |
| J. Sear spring screw     |              |
| K. Sear                  |              |
| L. Sear screw            |              |
| M. Bridle                |              |
| N. Bridle screw          |              |

The longitudinal section through the action shows the proper relationship of interior parts







# SWISS MODEL 1889 RIFLE

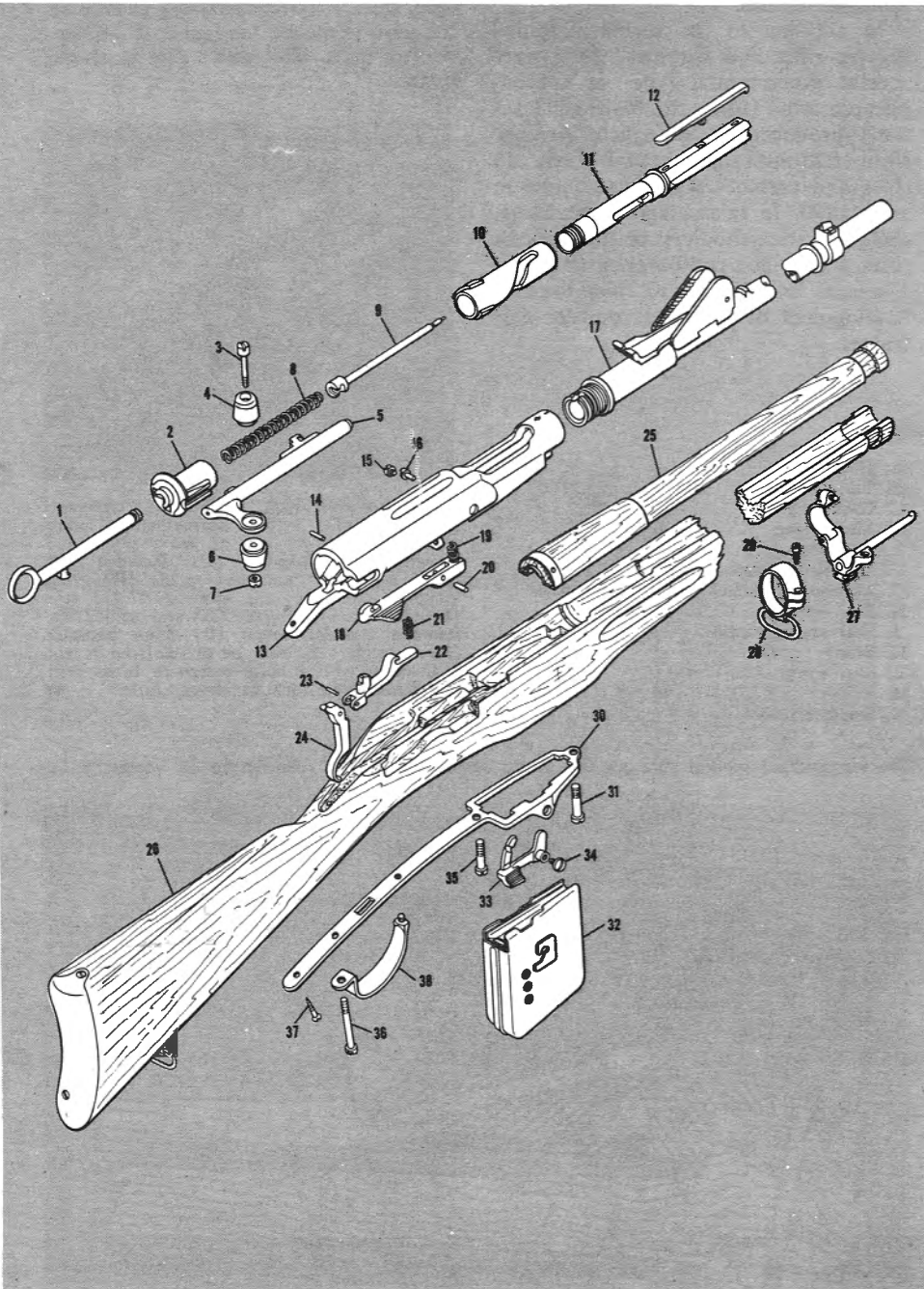
By EDWARD J. HOFFSCHMIDT

THE Swiss adopted their first cal. 7.5 mm. Service rifle in 1889. Designated Swiss Repeating Rifle Model 1889, it was chambered for the Model 90 rimless bottleneck cartridge. The Model 90 cartridge was loaded with 211-gr., paper-patched, steel-capped, hollow-base lead bullet and a compressed charge of semi-smokeless powder. Muzzle velocity was 1968 feet per second (f.p.s.). This cartridge was designed by Col. Eduard Rubin, who was Director of the Swiss Federal Ammunition Factory.

Col. Rudolph Schmidt, director of the Federal Arms Factory, was responsible for design of the rifle, which followed the then-accepted ideas of what a military rifle should be. It had a straight-pull action which afforded greater rapidity of fire than was possible with turn-bolt action designs then current. It had a magazine cut-off so that it could be fired by single loading, with the full magazine of 12 rounds held in reserve. When the cut-off is in down position, the magazine is lowered free of the bolt; in the up position, the cartridges will feed from the magazine.

Aside from representing finest workmanship and materials, the Model 1889 Schmidt-Rubin has little to recommend it. The system is unlike any other straight-pull design and is by far the longest and clumsiest. The receiver is about  $1\frac{1}{3}$  times as long as that of the Mauser Model 98. The safety mechanism is positive, but awkward to operate.

The Model 1889 rifle with 30.7" barrel is long and unwieldy. It is not surprising that it underwent a series of design changes in 1896, 1911, and 1931, resulting in a much more compact and effective arm. The original Model 90 ball cartridge was also subjected to much improvement, resulting in the still-standard Model 1911 ball cartridge with 174-gr. pointed boat-tail bullet driven at 2640 f.p.s.

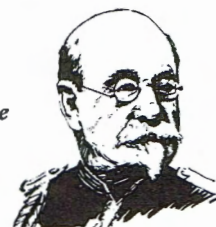




## A MAN TO REMEMBER

### OLE HERMANN KRAG

*Invented the  
Krag rifle*



*Born—Gudbrandsdalen, Norway,  
1837*

*Died—Norway, 1912*

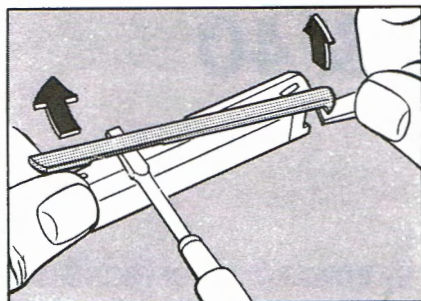
OLE KRAG was one of the few European inventors whose arms were ever officially adopted by the United States. Krag was fascinated by guns from early youth, and he decided to make the army his career. He was commissioned a second lieutenant in 1857, at the age of 20, and 4 years later was promoted to first lieutenant. His chosen branch was the artillery, but his natural talents in the field of small arms design and manufacture quickly determined his assignments.

In 1870 he was made captain and control officer at the Kongsberg Arms Manufactory. Ten years later he rose to be director of that establishment. In 1894 he became lieutenant colonel, and a year later a full colonel and master general of the ordnance. Under his direction the Kongsberg Manufactory was greatly expanded as was also the Raufoss Cartridge Factory and Powder Plant. He retired from the army in 1902.

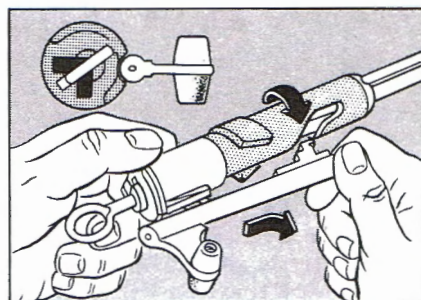
Krag is best known to most Americans for his famous repeating rifle. He brought out the first model in 1868, while still a first lieutenant. In 1874, together with the Swedish engineer Axel Jakob Petersson, he introduced the rifle into the Norwegian and Danish navies. In 1875 Krag developed an improved model of his rifle, and finally in 1888 with the aid of Erik Jørgensen the new rifle was successfully presented and adopted, first by Denmark in 1889, by the United States in 1892, and by his native Norway in 1894.

Even after his retirement Krag continued active in gun development and produced a new automatic pistol in 1909, just 3 years before his death.

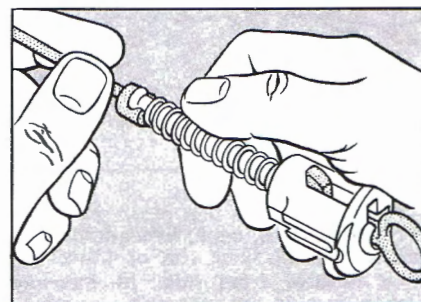
—HAROLD L. PETERSON.



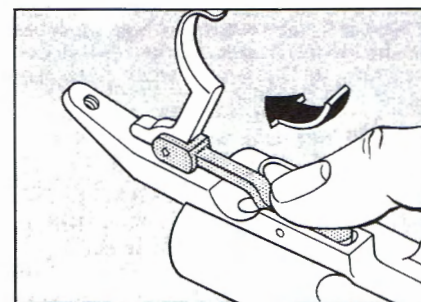
**1** To remove bolt, press down on bolt stop (18) and pull bolt free of gun. To remove extractor (12), wedge up extractor tail to free it from its notch in the bolt. Pry up claw and rotate extractor clockwise until it is free of bolt



**2** To disassemble bolt, pull back cocking piece (1) and bring it to rest between 2 square cutouts in bolt plug (2) as shown. Rotate locking sleeve (10) clockwise until cam rod (5) can be pulled clear of sleeve. Then slide cam rod (5) forward until its rear end is free of dovetail slot in bolt plug (2). Unscrew bolt plug (2) from bolt (11) and remove bolt locking sleeve (10)



**3** The firing pin (9) is retained something like those in the Springfield or Krag. To remove the pin, first be sure cocking piece is all the way forward in its notch. This will relieve firing pin spring (8) tension. Then pull back spring and slide firing pin off cocking piece (1)



**4** To remove the trigger assembly, push sear arm (22) in hard and back as shown, until it can't go any further. Then pull trigger (24) and entire trigger and sear assembly will drop free

#### Parts Legend

- |                          |                        |                                |
|--------------------------|------------------------|--------------------------------|
| 1. Cocking piece         | 14. Sear hinge pin     | 27. Front band                 |
| 2. Bolt plug             | 15. Ejector lock screw | 28. Rear band                  |
| 3. Bolt knob screw       | 16. Ejector            | 29. Band screw                 |
| 4. Upper bolt knob       | 17. Barrel             | 30. Trigger and magazine plate |
| 5. Bolt cam follower rod | 18. Bolt stop          | 31. Front plate screw          |
| 6. Lower bolt knob       | 19. Bolt stop spring   | 32. Magazine                   |
| 7. Knob nut              | 20. Bolt stop pin      | 33. Magazine cut-off           |
| 8. Firing pin spring     | 21. Trigger spring     | 34. Magazine cut-off screw     |
| 9. Firing pin            | 22. Sear arm           | 35. Middle plate screw         |
| 10. Bolt locking sleeve  | 23. Trigger pin        | 36. Rear plate screw           |
| 11. Bolt                 | 24. Trigger            | 37. Trigger plate screw        |
| 12. Extractor            | 25. Upper handguard    | 38. Trigger guard              |
| 13. Receiver             | 26. Stock              |                                |



# TOKAREV MODELS 38 & 40

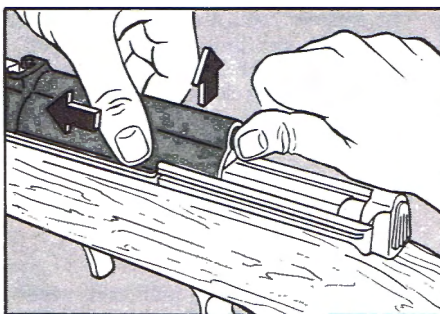
RUSSIA adopted the Tokarev Model 38 semi-automatic rifle in 1938. It replaced the Simonov Model 1936 rifle which had proved unsatisfactory. The Model 38 is an interesting weapon of simple construction. The locking mechanism is of the tilt-bolt type. When the bolt is locked, its rear end is seated into a well and held down by the bolt carrier. Gas from the fired cartridge, tapped through a hole in the barrel, actuates the gas piston assembly, which in turn pushes the bolt carrier to the rear. This lifts back end of the bolt free of its locking surface and carries it to the rear along with the bolt carrier.

The Russo-Finnish War of 1940 found the Model 38 wanting and it was slightly modified to become the Model 40. The Models 38 and 40 are basically the same gun and most parts are interchangeable. The major alteration was to replace the 2-piece stock with a one-piece type. The Model 40 was shortened a bit and made about  $\frac{1}{4}$  lb. lighter. A selective-fire model and a carbine model were also produced in 1940, but are relatively rare here.

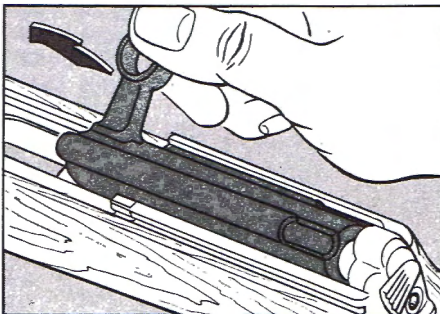
Although not too successful as military weapons, the Tokarev rifles contained a number of interesting features. One of these features is the gas port adjustment similar to that of the Browning automatic rifle. This allows the gas flow to the piston to be increased or decreased, depending on conditions. This was very important in a country such as Russia, where the temperature range can be great. It also allowed the rifleman to compensate for the varying quality of Soviet wartime ammunition. It is also interesting to note that the Models 38 and 40 receivers had a pair of grooves milled into their sides for attachment of telescope sights. Not all guns were fitted with scopes, but the grooves permitted attachment of a scope for sniper use. A scope for sniper use was also used on the German G43 semi-automatic rifle.

Last, but not least, the Tokarevs have fluted chambers. A number of thin longitudinal grooves or flutes were cut in the forward part of the chamber. When a cartridge is fired in a fluted chamber, some of the gas enters the flutes and aids in preventing the case sticking to the chamber walls.

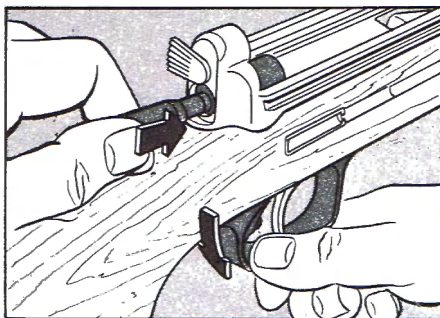
In spite of clever design features, the Tokarev rifles proved flimsy for military use. Considerable difficulty was experienced in the repair and maintenance of these weapons during World War II. They were dropped in the latter part of the war and replaced by the old but reliable bolt-action rifle.



**1** To field strip the Tokarev, remove the magazine (44), and retract the bolt fully to cock the hammer and clear the chamber. Next, pull the bolt cover (10) as far forward as it will go. Place the thumb over end of the rear spring guide (19) and while holding it forward, lift bolt cover from receiver. Ease rear spring guide to rear and at same time elevate its rear end and withdraw recoil spring assembly (19), (20), (21), (22) from bolt carrier (11). Removal of this assembly is eased if the forward recoil spring (22) is pulled hard to the rear as the assembly is withdrawn from the bolt carrier.

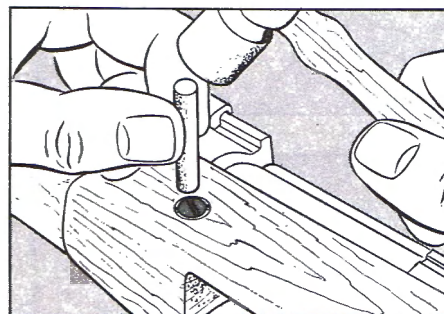


**2** To remove the bolt assembly, pull bolt carrier all the way to the rear. Then, while lifting upward on handle, ease bolt carrier forward until it unlocks from receiver. Withdraw bolt carrier forward and free of receiver. Remove the bolt (15) from the bolt carrier.

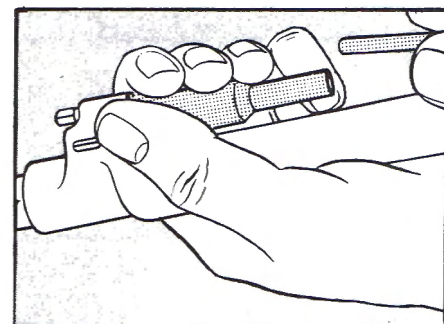


**3** To remove the trigger guard assembly, rotate the serrated plunger lock (32)  $\frac{1}{4}$ -turn clockwise. Then, with a screwdriver or cartridge push trigger guard latch plunger (29) in as far as possible until it releases the rear of the trigger guard (59). Pull downward on trigger guard loop and withdraw trigger guard assembly from rifle. Lock mechanism should be removed prior to removing trigger guard assembly from rifle.

By EDWARD J. HOFFSCHMIDT



**4** To disassemble barrel and receiver from stock, it is first necessary to remove barrel bands, upper handguards, and cleaning rod. Cleaning rod of Model 38 rifle is released from stock by inserting bullet tip in rear end of handle and pushing forward until handle plunger is released from its detent. Then, lift rod handle upward and withdraw rod clear of rifle. In Model 38 rifle the barreled action is retained to the 2-piece stock by a split cross pin (37) which is removed by drifting it out from left to right. Cross pin in Model 40 rifle is a screw removed from right side of stock. With cross pins removed, barreled action is readily separated from stock. Fore-stock portion of the Model 38 rifle stock must be pulled to rear slightly to free it from barrel.



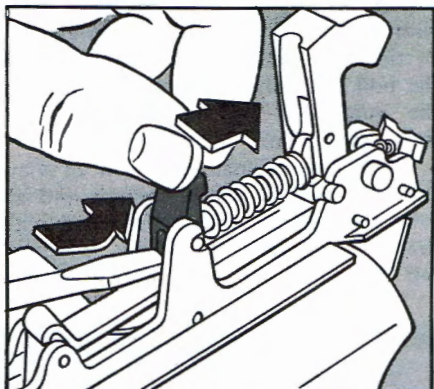
**5** To disassemble operating rod assembly, hold gas piston (6) forward and pull piston rod (7) to rear until its upper end clears gas piston. Swing piston rod aside and withdraw it and accompanying piston rod extension (8) and piston spring (9) from its seat. Gas piston can now be pulled down and off gas cylinder (5).



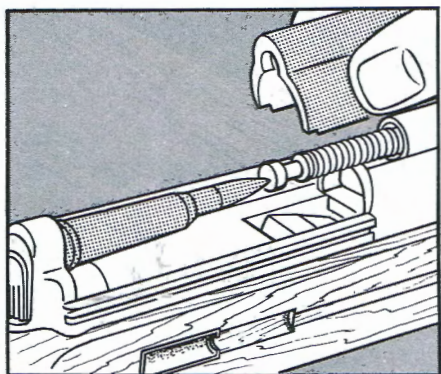


### Parts Legend

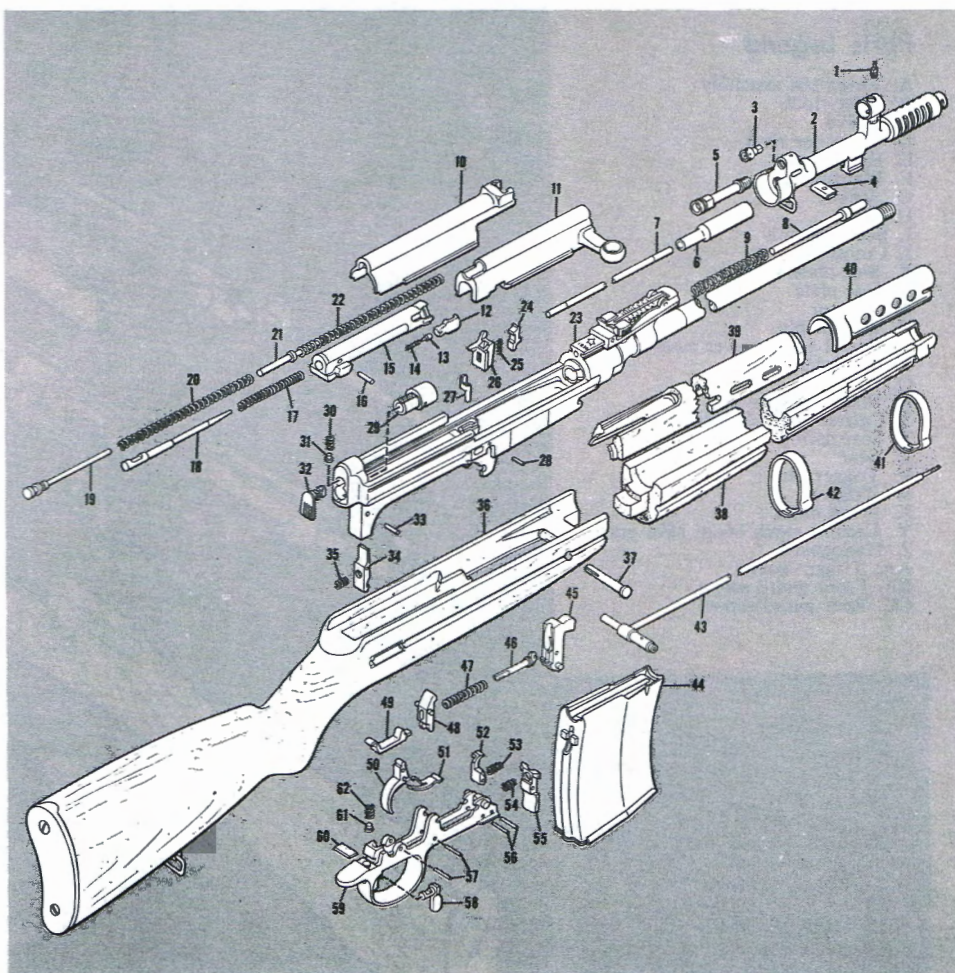
- |                         |                                 |                                |
|-------------------------|---------------------------------|--------------------------------|
| 1. Front sight          | 22. Forward recoil spring       | 43. Cleaning rod               |
| 2. Muzzle extension     | 23. Barrel and receiver         | 44. Magazine                   |
| 3. Gas regulator        | 24. Hold-open latch             | 45. Hammer                     |
| 4. Muzzle extension key | 25. Hold-open latch spring      | 46. Hammer spring guide        |
| 5. Gas cylinder         | 26. Ejector                     | 47. Hammer spring              |
| 6. Gas piston           | 27. Disconnecter                | 48. Sear                       |
| 7. Piston rod           | 28. Ejector pin                 | 49. Trigger bar                |
| 8. Piston rod extension | 29. Trigger guard latch plunger | 50. Trigger                    |
| 9. Piston spring        | 30. Detent spring               | 51. Trigger spring             |
| 10. Bolt cover          | 31. Detent                      | 52. Disconnecter operated sear |
| 11. Bolt carrier        | 32. Plunger lock                | 53. Sear spring                |
| 12. Extractor           | 33. Trigger guard latch pin     | 54. Magazine catch spring      |
| 13. Extractor plunger   | 34. Trigger guard latch         | 55. Magazine catch             |
| 14. Extractor spring    | 35. Trigger guard latch spring  | 56. Magazine catch pin         |
| 15. Bolt                | 36. Buttstock                   | 56. Sear pin                   |
| 16. Firing pin retainer | 37. Split cross pin             | 57. Trigger spring pin         |
| 17. Firing pin spring   | 38. Forestock                   | 57. Trigger pin                |
| 18. Firing pin          | 39. Upper handguard             | 58. Safety catch               |
| 19. Rear spring guide   | 40. Piston cover                | 59. Trigger guard              |
| 20. Rear recoil spring  | 41. Front band                  | 60. Spring cover               |
| 21. Middle spring guide | 42. Rear band                   | 61. Safety catch detent        |
|                         |                                 | 62. Detent spring              |



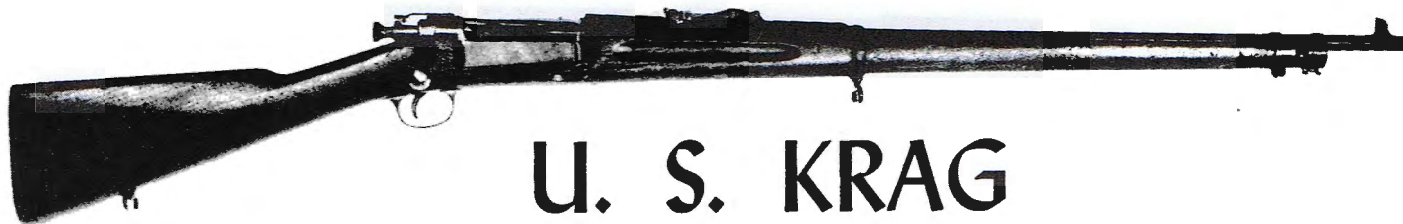
**6** To disassemble the trigger mechanism, the hammer (45) must be uncocked. First, push down on the disconnecter sear (52) until it clicks, and pull the trigger. To remove the sear (48), first clamp the trigger guard in a vise. Grasp the upper portion of the sear and push the lower end with a large screwdriver. Push the sear out and forward against the hammer spring (47) until it is free of its seat in the guard. Reassemble in the same manner.



**7** The Russian 7.62 mm. Service cartridge is just the right length to retain the recoil spring assembly in forward position when replacing the bolt cover. Push the bolt carrier assembly all the way forward and compress the recoil springs. Slip a cartridge between receiver abutment and end of rear spring guide (19) as shown. Fit bolt cover (10) over the rear spring guide and press it down over the bolt carrier. Pull cover slightly forward and remove cartridge. Ease bolt cover to rear.







# U. S. KRAG

By E. J. Hoffschmidt

**T**HE Krag-Jorgensen rifle, adopted by the U. S. Army in 1892, was the first U. S. Service arm designed for smokeless powder. It was the end product of numerous trials by boards of inquiry appointed to select a repeating rifle to replace the cal. .45-70 Springfield single-shot rifle adopted in 1873. A total of 53 foreign and domestic arms were tested.

The Krag-Jorgensen, more familiarly known as the Krag, was a joint development of Capt. Ole Hermann Johannes Krag and Erik Jorgensen, both Norwegians. A military rifle of their design was adopted by Denmark in 1889, and another by Norway in 1894.

Following adoption by the U. S., production of the Model 1892 Krag

rifle was instituted at Springfield Armory, and the first issue of rifles was made in the fall of 1894. The Service cartridge for these rifles, designated .30 U. S. Army (.30-40 Krag), was of rimmed type loaded with a 220-gr. round-nose bullet at a muzzle velocity of 2000 feet per second (f.p.s.).

As is usual with any new Service weapon, the Krag was not well received by the Army. Ammunition as first manufactured was inaccurate, and the quality of early barrels was erratic. The Krag rifle was subsequently modified in 1896 and again in 1898. During this period Springfield Armory produced 3 Krag carbines, the Models 1896, 1898, and 1899. Quality of both arms and ammunition improved during

the course of manufacture and many small changes were made.

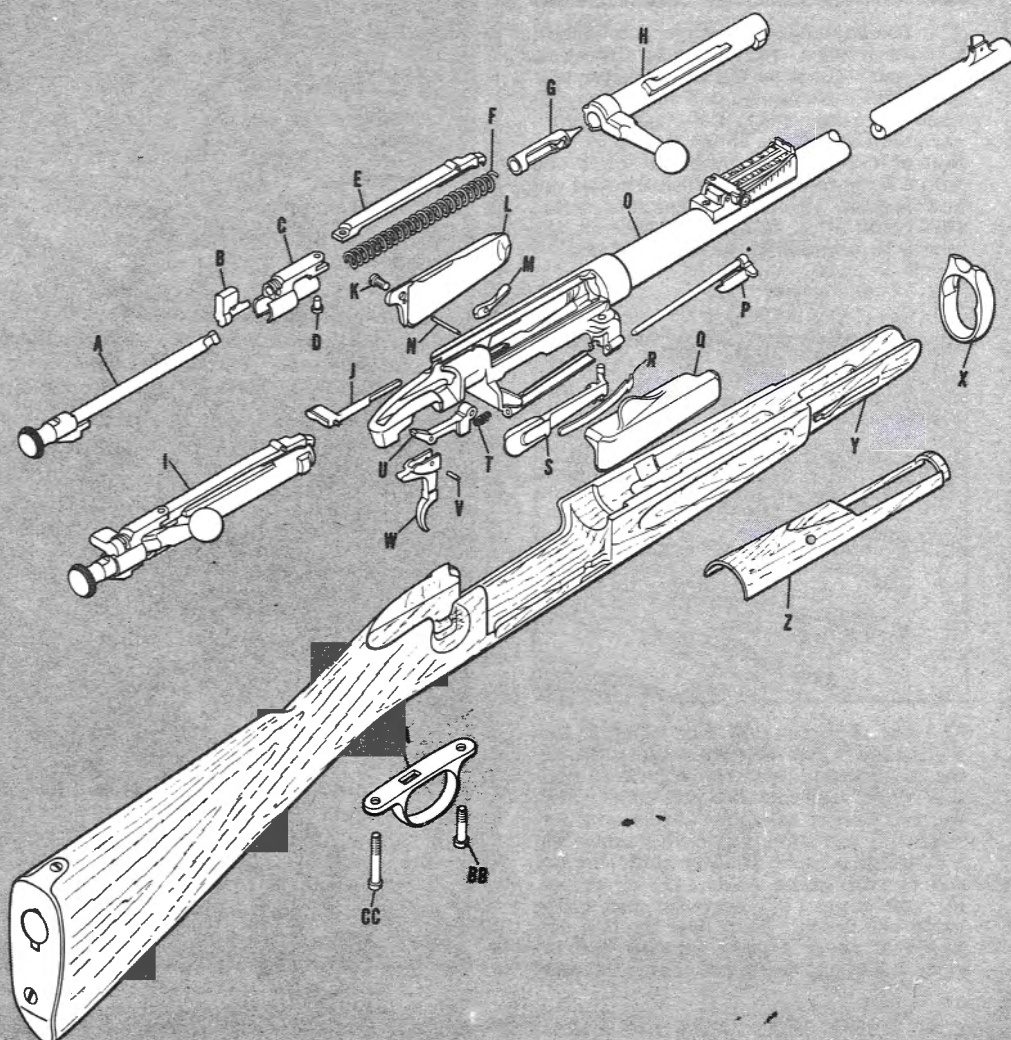
The Krag gave a good account of itself in the Spanish-American War, Philippine Insurrection, and the Chinese Boxer Rebellion, and later proved most popular with sportsmen.

The Krag has by far the smoothest action of any turn-bolt military rifle; cam angles on the bolt and safety are particularly well designed. Even though the bolt has only one front locking lug, the guide rib and bolt handle both serve as auxiliary locking lugs.

From the sportsman's point of view the box feed is simple enough and allows the magazine to be charged with the bolt closed. The Army, however, felt the need for a magazine system

## Parts Legend

- A. Firing pin assembly
- B. Safety lock
- C. Sleeve
- D. Extractor rivet
- E. Extractor
- F. Mainspring
- G. Striker
- H. Bolt
- I. Bolt assembly
- J. Cutoff
- K. Side-plate screw
- L. Side-plate
- M. Ejector
- N. Ejector pin
- O. Barrel and receiver assembly
- P. Hinge bar
- Q. Gate
- R. Magazine spring
- S. Carrier and follower assembly
- T. Sear spring
- U. Sear
- V. Trigger pin
- W. Trigger
- X. Front band
- Y. Carbine stock Mod. 1896 ass'y
- Z. Handguard
- AA. Trigger guard
- BB. Front guard screw
- CC. Rear guard screw



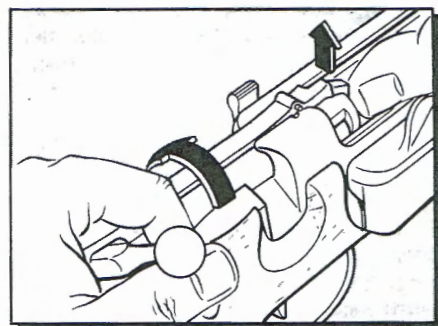


which would eliminate the necessity for handling loose rounds. Several attempts were made to adapt the Krag for charger loading, but none was successful.

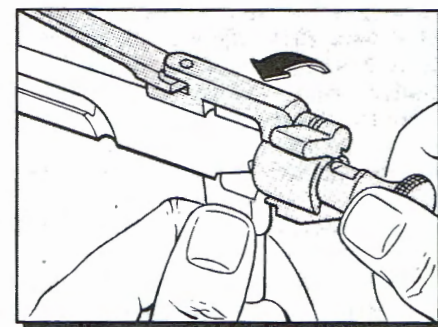
The net result was obsolescence of the Krag in favor of the clip-loaded Mauser-type rifle, adopted in 1903, known as the Model 1903 Springfield.

According to Springfield Armory, 442,883 Krag rifles and 63,116 Krag carbines were produced between 1894 and 1904 when production ceased.

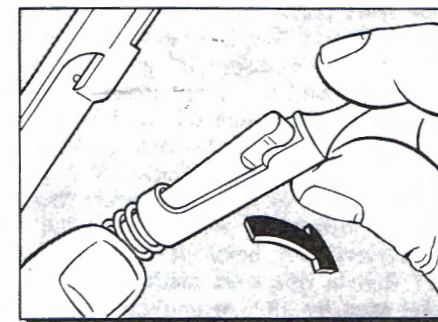
During World War I many Krag rifles were issued to American troops for drill purposes, but not for combat.



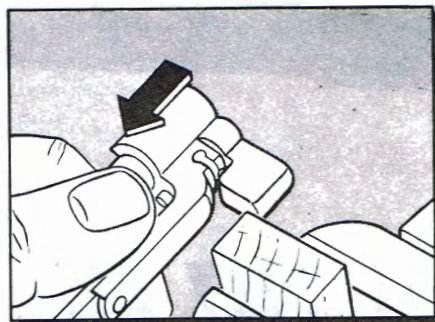
**1** To remove bolt, open it and pull it all the way to the rear. Press up on end of extractor (E) and at same time turn bolt counterclockwise. Extractor will snap free of receiver and bolt can be withdrawn



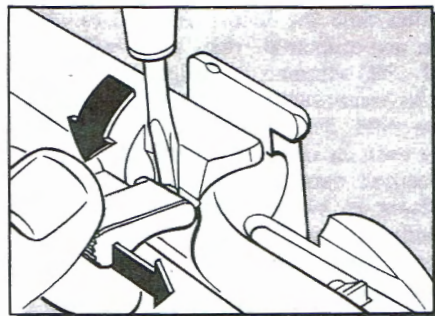
**2** To strip bolt, hold as shown. Pull back on cocking piece knob and rotate entire assembly. Bridge-like section of sleeve will rotate off shoulder on bolt, and whole assembly will snap free



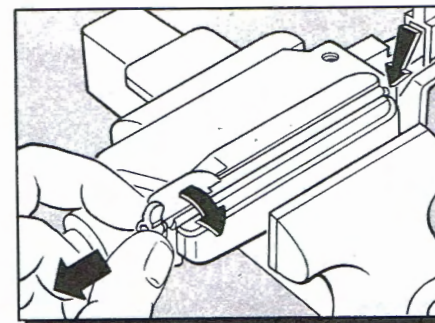
**3** To remove striker (G), simply snap it off firing pin rod (A) as shown. Keep a strong grip on striker when it releases from firing pin rod as it is under heavy spring pressure and can fly off hazardously



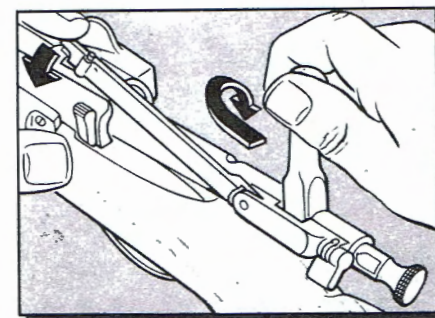
**4** After striker (G) and firing pin assembly (A) have been removed, safety lock (B) can be worked loose. Place thumb piece in vertical position as shown, and hook it over a block of wood and pull sleeve (C) back. Safety lock will then snap free



**5** Cutoff (J) can be removed only when detent pin is pushed in. To do this, insert a thin screwdriver behind cutoff when it is in vertical position. Push cutoff down to a horizontal position and detent will climb screwdriver blade. Pull cutoff free



**6** Hinge bar (P) is often deformed by improper removal. Hold receiver in a vise, or clamp, to relieve pressure on hinge bar. Rotate the spring and pull hinge bar free. It may be necessary to tap pin at front end (shown by arrow) to start it moving



**7** To replace bolt, insert it far enough for locking lug to clear receiver wall. Push extractor down into slotted portion of receiver bridge and rotate bolt clockwise. Extractor will snap into position

## A MAN TO REMEMBER

JOHN C. GARAND

*Invented the Garand rifle*

Born—Jan. 1888

St. Remi, Quebec

Canada

Died—Feb. 1974



JOHN GARAND spent only 10 years in Canada before his parents moved to Denisonville, Conn., and then on to Jewett City. At age 20 he became a tool- and gauge-maker for Browne & Sharpe and then in 1914 he became acting foreman and machine designer for Federal Screw Corp. in Providence, R. I.

From Providence, Garand moved to New York City, and it was there that he turned his attention to developing automatic firearms. The first World War focused attention on such weapons, and Garand was interested to learn of the frequent malfunctions that plagued them.

Having conceived some designs which he thought would eliminate such failures, he approached the Naval Invention Bureau and was soon put to work at the National Bureau of Standards in Washington, where he successfully developed a primer-activated light machine gun. There Maj. Lee Wright met the inventor and was sufficiently impressed to obtain Army Ordnance sponsorship and move Garand to the Springfield Armory in 1919.

Garand's machine gun had been soundly designed, but it failed to perform the functions the Army desired in such an arm. Thus Garand was instructed to develop a semi-automatic rifle, and this he proceeded to do, still using the explosion of the primer to activate the mechanism. He succeeded in perfecting such an arm only to have a change in ammunition adopted in 1925 force him to redesign his rifle, this time utilizing gas pressure for the activation.

Tests of the new rifle were highly satisfactory, but before even limited production could be started the caliber of the rifle was ordered increased from .276 to .30, and this caused further delays and alterations before the final adoption of the arm on Jan. 9, 1936. —HAROLD L. PETERSON





# U. S. MODEL 1917 RIFLE (ENFIELD)

By James M. Triggs

**T**HE U. S. Rifle, Cal. .30, Model of 1917, is of basic Mauser turn-bolt type with dual front locking lugs, one-piece bolt, and staggered column box magazine. Developed during World War I, it was a modification of the British Pattern 1914 Service Rifle.

In 1913 British Ordnance developed an experimental Mauser-type bolt-action rifle chambered for a cal. .276 rimless cartridge loaded with a 165-gr. pointed bullet at 2800 feet per second (f.p.s.). The intent of these experiments was to develop a replacement for the cal. .303 Lee-Enfield Service rifle. Only a limited number of cal. .276 rifles had been manufactured on a toolroom basis prior to the start of World War I, at

which time the British decided to alter the experimental rifle to handle the cal. .303 rimmed cartridge.

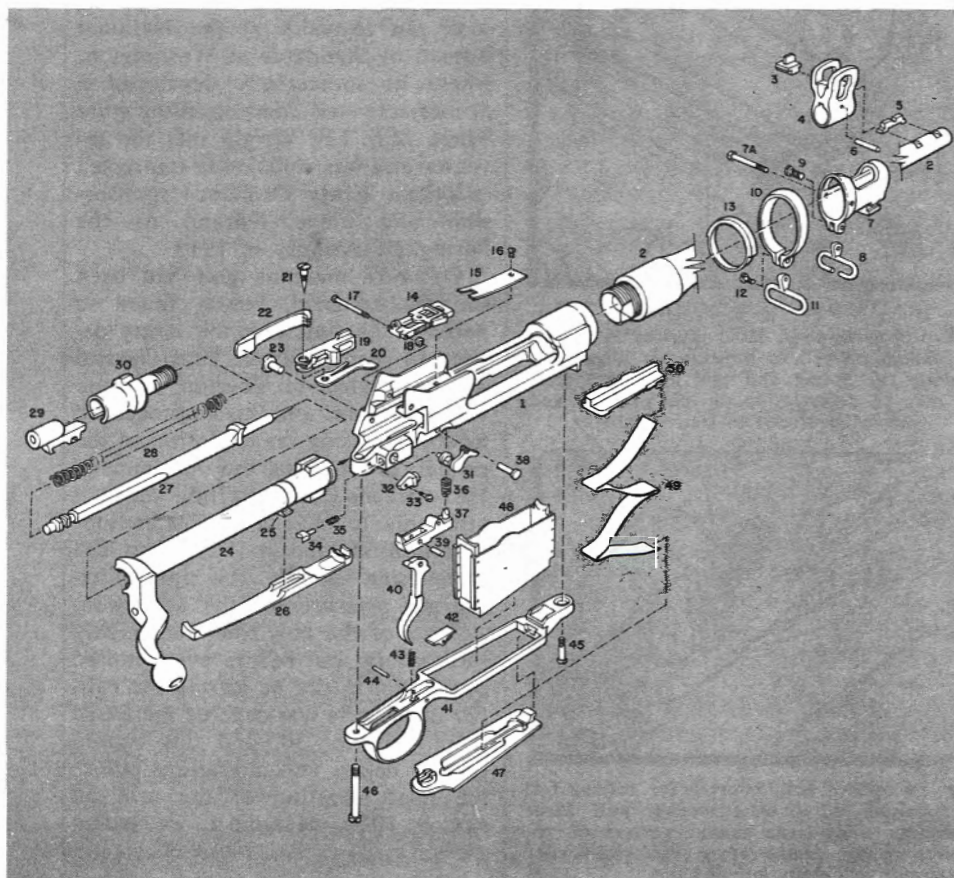
As manufacturing facilities for the new rifle, designated Pattern 1914, did not exist in England several U. S. firms accepted contracts in 1914 to manufacture it. These were Winchester Repeating Arms Co., New Haven, Conn., Remington Arms-Union Metallic Cartridge Co., Ilion, N. Y., and Remington Arms Co. of Delaware. The latter firm operated the Eddystone Arsenal at Eddystone, Pa., which was owned by the Baldwin Locomotive Works. On Sept. 21, 1916, after a considerable number of rifles had been delivered, these contracts were canceled by the

British government. This cancellation was largely due to the fact that British arsenals and factories had been able to achieve more than adequate production of SMLE rifles to satisfy troop requirements.

When the United States entered the war on Apr. 6, 1917, the supply of Model 1903 Springfield rifles on hand was relatively small and production facilities of Rock Island Arsenal and Springfield Armory were not adequate to turn out Model 1903 rifles in the large quantities necessary to equip the rapidly expanding American Army. There was not sufficient time for U. S. firms to tool up for production of the Model 1903 rifle and the idea of equipping U. S. troops with the cal. .303 Pattern 1914 rifle was not acceptable as it would have complicated ammunition supply. The alternative was to modify the Pattern 1914 rifle to handle the cal. .30-'06 cartridge. After considerable difficulty in standardizing the modified rifle, designated U. S. Rifle, Cal. .30, Model of 1917, initial deliveries were made by Winchester on Aug. 18, 1917, followed by Eddystone Arsenal on Sept. 10 and Remington about Oct. 28. Upon final termination of these contracts on Nov. 9, 1918, a total of 2,193,429 Model 1917 Enfield rifles had been produced. These figures reflect finished rifles only, and do not include spare parts.

After World War I, Model 1917 Enfield rifles were stored in war reserve and large numbers were subsequently sold to NRA members through the Director of Civilian Marksmanship. During the early part of World War II large quantities of these rifles were first sold and then lend-leased to our Allies.

Receivers and bolts of the Model 1917 Enfield rifle were made of 3½% nickel steel by all 3 manufacturers. In modifying the cal. .303 Pattern 1914 rifle for the .30-'06 cartridge it was necessary to change the rifling specifications. The 5-groove, left twist, Enfield





rifling was retained, but bore diameter was reduced to .300" with groove depth of .005". Magazine capacity is 6 cartridges and the receiver has clip slots for reloading with a 5-round Model 1903 Springfield clip.

The aperture-type folding leaf rear sight is adjustable for elevation only, and is a superior battle sight to that of the Model 1903 Springfield. Windage adjustments in the Model 1917 are made by tapping the front sight to left or right in its dovetail. The cock-on-closing action of the Model 1917 rifle has been the subject of some criticism by Americans accustomed to the cock-on-opening Model 1903 Springfield and Mauser 98 rifles. Actually this feature is a very sound one for a military rifle, in which the chamber may become so hot that extraction becomes difficult due to sticking cases, and thus adds to the effort required to lift the bolt handle. Those who become proficient with cock-on-closing rifles are not aware of any handicap by virtue of this mode of bolt operation.

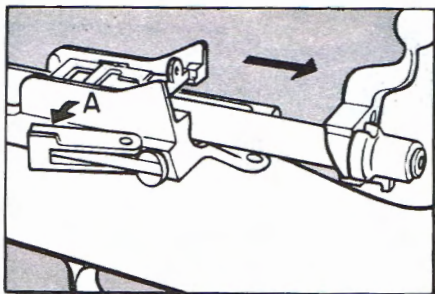
During World War II it was found necessary to produce additional barrels for the Model 1917 rifle and these were made by private firms. The High Standard Manufacturing Corp. produced 4-groove barrels and Johnson Automatics produced 2-groove barrels, both with right twist and to Model 1903 Springfield rifling specifications. After World War II a few NRA members who had purchased rifles through the DCM complained that the receiver rings of their rifles were cracked. The majority of these rifles were of Eddystone manufacture and had been rebarreled during the World War II period. In some instances the cracks were not clearly evident until the receiver had been polished and blued.

Faulty receivers were at one time exchanged gratis by the DCM but supply of this part is exhausted.

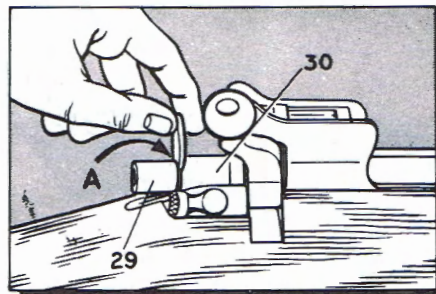
#### DISASSEMBLY PROCEDURE

Remove bolt and field strip as shown in accompanying illustrations. Magazine assembly is stripped by pressing bullet end of cartridge or similar implement into hole at bottom rear of floorplate (47), at same time drawing floorplate to rear and removing along with magazine spring (49) and follower (50).

Barrel and receiver are removed from buttstock after sliding barrel bands (7 & 10) forward off stock and removing front and rear handguards and unscrewing front and rear guard screws (45 & 46). Pull trigger guard (41) and magazine (48) out from bottom of buttstock. Remaining parts (bolt stop assembly, safety-lock assembly, sear, trigger, floorplate catch assembly, sights, etc.) are all easily removed if necessary for replacement or repair. Reassembly is accomplished in reverse order.



**1** To remove bolt, hold bolt stop (19) out as shown at "A" and pull bolt straight out to the rear

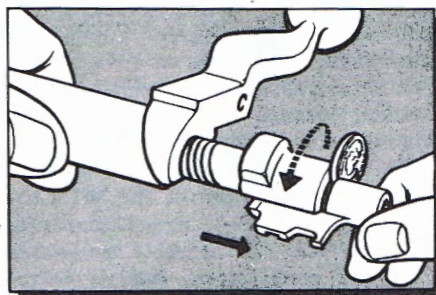


**2** To disassemble bolt, open rifle bolt and engage safety. Close bolt, then elevate bolt as shown while at the same time inserting nickel or other coin between end of cocking piece and bolt sleeve so that coin is trapped between these parts as shown

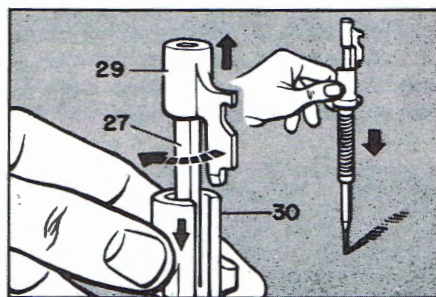
#### Parts Legend

1. Receiver
2. Barrel
3. Front sight blade
4. Front sight carrier
5. Front sight spline
6. Front sight pin
7. Upper band
- 7A. Upper band screw
8. Stacking swivel
9. Stacking swivel screw
10. Lower band
11. Lower band swivel
12. Lower band swivel screw
13. Handguard ring
14. Rear sight assembly
15. Rear sight base spring
16. Rear sight base spring screw
17. Rear sight joint bolt
18. Rear sight joint bolt nut
19. Bolt stop
20. Ejector
21. Bolt stop screw
22. Bolt stop spring
23. Bolt stop spring rest
24. Bolt
25. Extractor collar
26. Extractor
27. Striker
28. Mainspring
29. Cocking piece
30. Sleeve
31. Safety-lock
32. Safety-lock holder
33. Safety-lock holder screw
34. Safety-lock plunger
35. Safety-lock plunger spring
36. Sear spring
37. Sear
38. Sear pin (Enters receiver from left side—shown on right here for clarity)
39. Trigger pin
40. Trigger
41. Trigger guard
42. Floorplate catch
43. Floorplate catch spring
44. Floorplate catch pin
45. Front guard screw
46. Rear guard screw
47. Floorplate
48. Magazine
49. Magazine spring
50. Follower

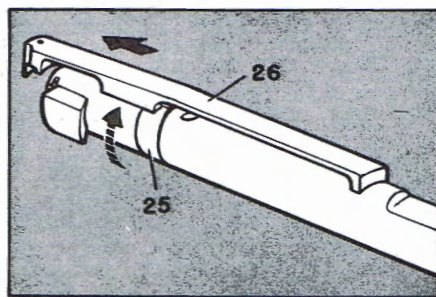
Note: The following parts are omitted in the drawing: Buttstock, buttplate, buttplate screws (2), butt swivel, swivel screws (2), rear band pin, front and rear handguards, stock bolt and nut, front and rear guard screw bushings



**3** Remove bolt and unscrew percussion assembly as shown



**4** With striker point resting on wood surface, force sleeve (30) down. Remove coin which has been trapped between end of cocking piece and sleeve. Continue forcing sleeve down, compressing mainspring (28) until cocking piece lug clears lug slot in sleeve. Turn cocking piece ¼ turn right or left, disengaging it from striker, and draw cocking piece off to rear. Relieve mainspring pressure gradually and draw off sleeve



**5** Turn extractor (26) to cover gas escape holes in bolt and push forward on extractor until it is free of extractor collar (25). Reassemble bolt in reverse order





# The U.S. M1 Carbine

**T**HE U.S. Carbine, Cal. .30 M1 was developed by Winchester Repeating Arms Co. of New Haven, Conn., and adopted for Service use in 1941. It is a semi-automatic, gas-operated, air-cooled, shoulder weapon fed by a detachable box magazine holding 15 rounds.

To meet requirements of airborne troops, a modification of the M1 Carbine designated M1A1 was standardized in May 1942. The M1A1 Carbine has a folding metal stock, but its barrel and action assembly is identical to that of the M1 version.

The M2 and M3 Carbines, standardized in September 1944 and August 1945 respectively, were fitted with a selector switch permitting either semi- or full-automatic fire. They were regularly issued with a 30-round capacity box magazine interchangeable with the

By JAMES M. TRIGGS

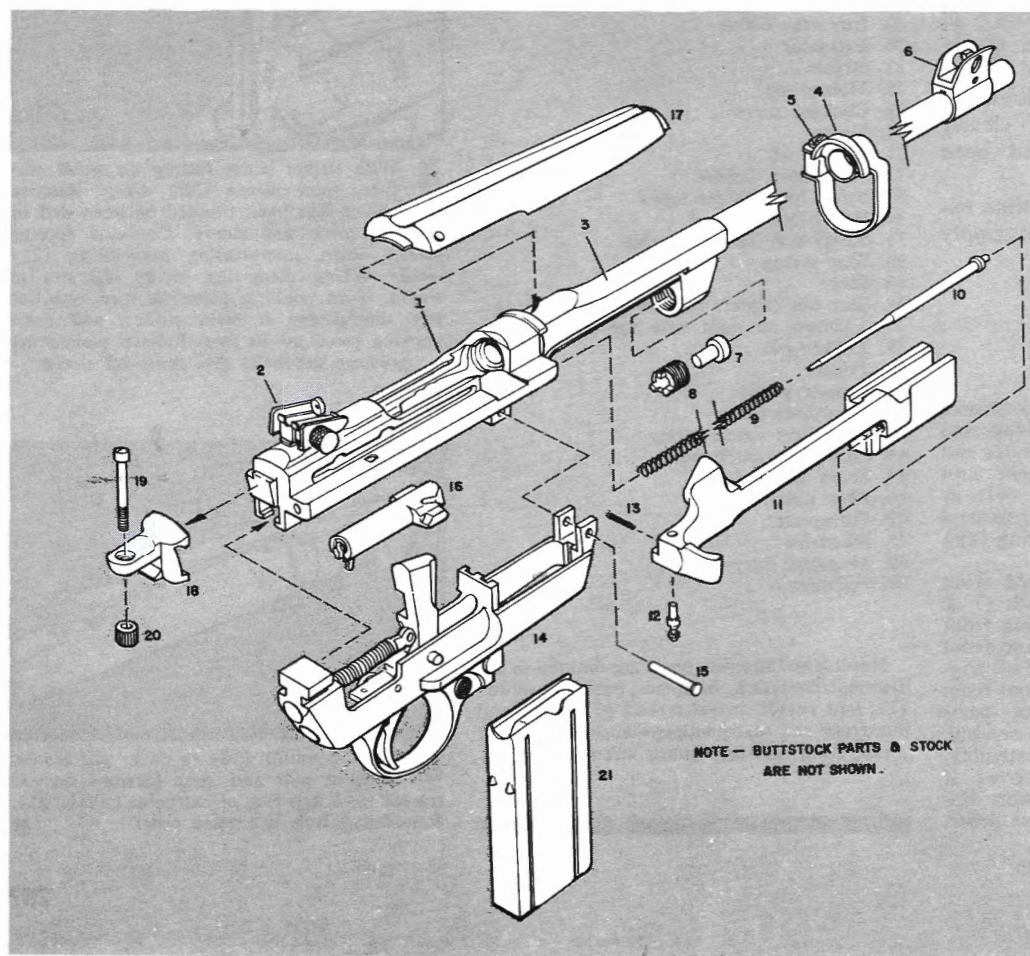
15-round magazine. The M2 and M3 Carbines, being capable of full-automatic fire, are classified as "machine guns" under the National Firearms Act. Under the Act, a \$200 fee must be paid to the Federal Government before one can legally own, sell, or otherwise transfer a weapon so classified.

Prime contractors for production of U. S. Cal. .30 Carbines were: Winchester Repeating Arms Co.; Inland Division, General Motors Corp.; Rock-Ola Corp.; National Postal Meter Co.; International Business Machines Corp.; Underwood Elliott Fisher Co.; Saginaw Steering Gear Div., General Motors Corp.; Standard Products Corp.; and Quality Hardware & Machine Corp.

During the World War II period there were many modifications and improvements made to parts and accessories for the various models. These included bayonet attachments, grenade launchers, sights, and design changes in parts including the safety, barrel, hammer, and bolt.

Service ammunition manufactured for use in U. S. Cal. .30 Carbines included a grenade-launching cartridge, a tracer cartridge, and a ball cartridge with full-jacketed, semi-round-nosed, flat-based bullet with nominal weight of either 108 grs. or 111 grs., according to presence or absence of hollow cup in the base. The 108-gr. cup-based bullet was manufactured prior to Feb. 14, 1942. Average chamber pressure of the ball cartridge is 40,000 p.s.i. (pounds per square inch) with average muzzle velocity of 1770 f.p.s. (feet per second). Muzzle energy with 108-gr. bullet is 930 ft.-lbs. Muzzle energy with 111-gr. bullet is 956 ft.-lbs.

The cal. .30 Carbine is inadequate for hunting any but the smallest game. It is not adequate for deer or black bear. The game laws of many states specifically, or indirectly, prohibit use of the Carbine and its cartridge for the taking of certain game. Indirect prohibition applies where minimum energy ratings have been established for rifle cart-



## PARTS LEGEND

1. Receiver
2. Rear sight assembly
3. Barrel (with integral gas cylinder lug)
4. Front band assembly
- 4A. Front band lock spring (contained in forward end of stock—not shown)
5. Front band screw
6. Front sight assembly
7. Piston
8. Piston nut
9. Operating slide spring
10. Operating slide spring guide
11. Operating slide
12. Operating slide stop pin
13. Operating slide stop spring
14. Trigger housing assembly
15. Trigger housing retaining pin
16. Bolt assembly
17. Handguard assembly
18. Recoil plate
19. Recoil plate screw
20. Recoil plate screw escutcheon (contained in underside of stock)
21. Magazine assembly



ridges used in taking protected game. Since game laws are subject to variation, check with a game warden or Conservation Dept. authority relative to such matters.

## DISASSEMBLY PROCEDURE

Push magazine catch (C, below) to left and withdraw magazine (21) from underside of receiver (1). Loosen front band screw (5) and press in front band lock spring which is set in forward end of stock at right. Slip front band (4) forward on barrel (3). Slide wooden handguard (17) forward until its metal liner disengages from undercut in front of receiver and lift handguard free.

Separate barrel and receiver assembly from stock by lifting front end of barrel until lug at rear of receiver disengages from recoil plate (18).

Push trigger housing retaining pin (15) out of receiver and trigger housing (14) from left to right. Pull trigger housing (14) forward until it clears grooves at rear of receiver and remove from receiver.

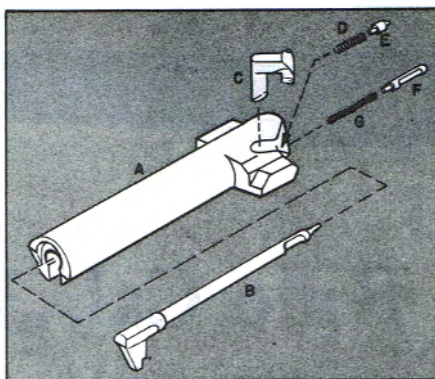
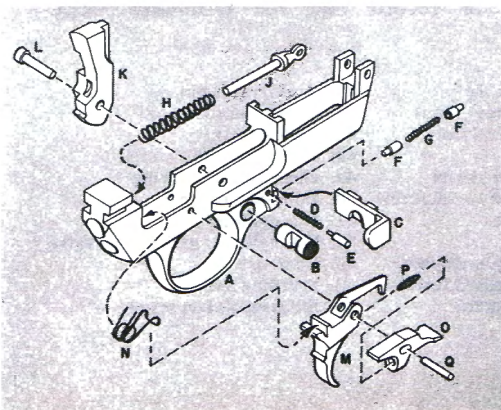
Pull operating slide spring (9) and guide (10) to rear and disengage front of guide from its seat in operating slide (11). Move guide and spring to right in order to clear edge of slide and remove from receiver. Pull operating slide (11) back until lug at rear of slide clears cut-out in retaining groove at right side of receiver. Lift handle of slide up and to right free of groove. Push slide forward slightly, rotating counterclockwise so that lug in front end of slide clears cut-out in slide groove in underside of barrel. Remove slide.

Slide bolt (16) to rear about 1" or more and twist bolt to the left while pulling forward end upward. Turn bolt so lug on rear of firing pin will clear cut in rear of receiver and remove bolt.

Disassembly of trigger housing parts, shown below, is not necessary for normal cleaning purposes and is not recommended. Reassemble in reverse.

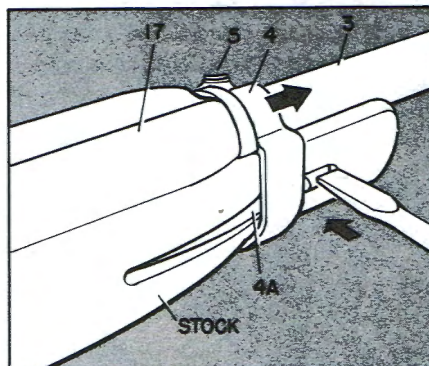
## TRIGGER ASSEMBLY

- |                                  |                          |
|----------------------------------|--------------------------|
| A. Trigger housing               | H. Hammer spring         |
| B. Safety                        | J. Hammer spring plunger |
| C. Magazine catch                | K. Hammer                |
| D. Magazine catch spring         | L. Hammer pin            |
| E. Magazine catch spring plunger | M. Trigger               |
| F. Safety detent plungers (2)    | N. Trigger spring        |
| G. Safety detent plunger spring  | O. Sear                  |
|                                  | P. Sear spring           |
|                                  | Q. Trigger pin           |

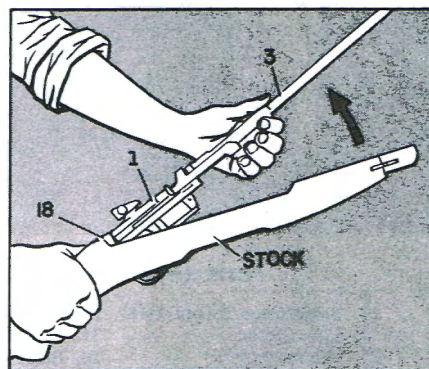


- |                     |                             |
|---------------------|-----------------------------|
| A. Bolt             | E. Extractor spring plunger |
| B. Firing pin       | F. Ejector                  |
| C. Extractor        | G. Ejector spring           |
| D. Extractor spring |                             |

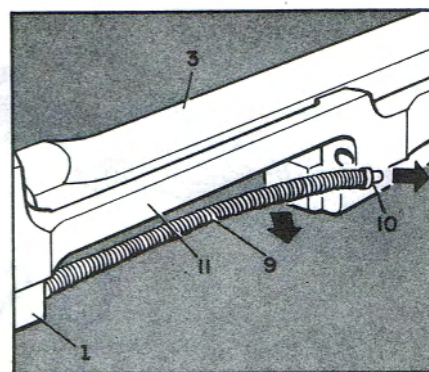
**1** To disassemble bolt, press in extractor spring plunger (E) with small screwdriver blade or similar tool and push extractor (C) up out of bolt (A) from bottom, taking care to prevent forcible ejection of compressed spring (D). Ejector and spring (G & F) and firing pin (B) are easily removed. Reassemble in reverse



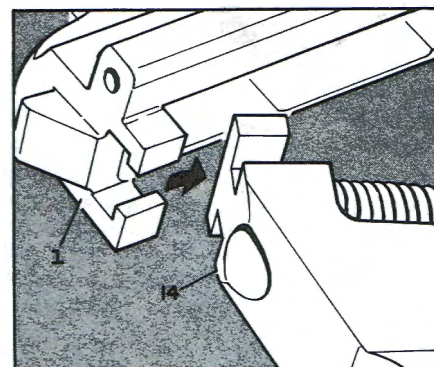
**2** Before removing front band (4), front band lock spring (4A) must be depressed as shown using tip of screwdriver blade or small punch. Slide the band forward until it is clear of the stock and of the handguard (17)



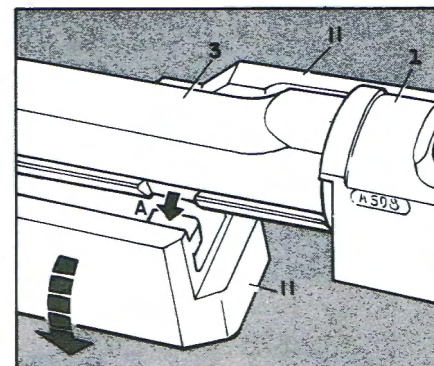
**3** To separate barrel and receiver from stock, grasp stock in right hand as shown and lift front of barrel upward until the rear end of the receiver is free of the recoil plate (18) in the stock



**4** Pull operating slide spring (9) and guide (10) to rear slightly until guide is clear of hole in slide (11). Move guide and spring to right as shown in order to clear slide and withdraw guide and spring to front, pulling spring out of its hole in the front end of the receiver

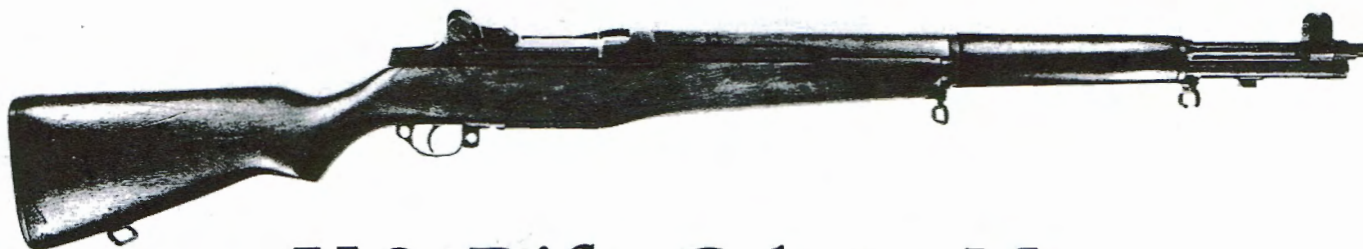


**5** After removing trigger housing retaining pin (15), trigger housing (14) must be pushed forward until lugs at rear of housing are clear of slots in underside of receiver as shown



**6** After disengaging lug at rear of operating slide (11) from retaining groove at right of receiver, move slide forward to position shown and rotate counterclockwise to disengage the lugs at the front of slide from the grooves in barrel as shown at "A"





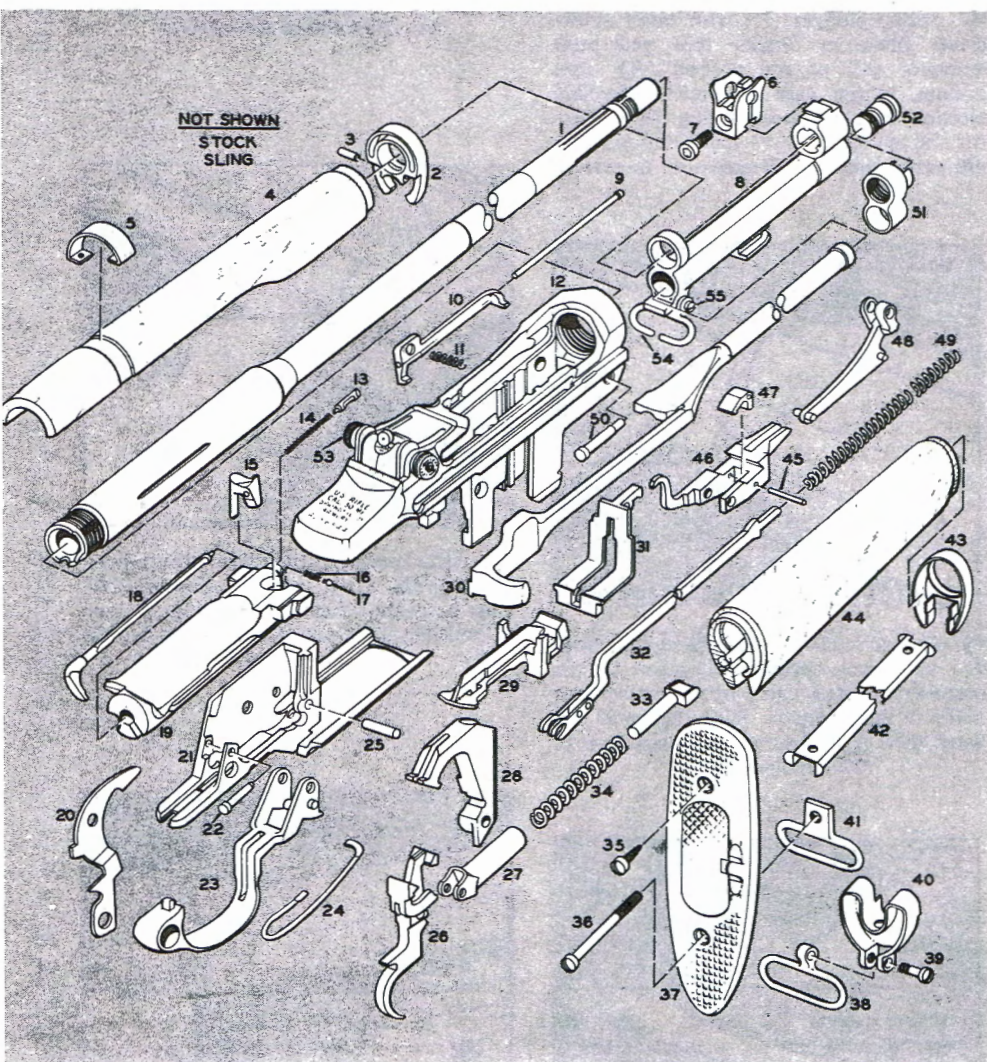
# U.S. Rifle, Cal. .30, M1

By Thomas E. Wessel

ON Jan. 9, 1936, the U. S. Army adopted a semi-automatic rifle to replace the Model 1903 bolt-action Springfield which had been the standard U. S. Service rifle since 1903. The new rifle, designated U. S. Rifle, Cal. .30, M1, was also adopted shortly afterward by the U. S. Navy and the Marine Corps.

The M1 rifle was invented and developed at Springfield Armory by Canadian-born John C. Garand, a civilian engineer who had been employed at the Armory since 1919. Garand's experience in the field of design and production was extensive. His initial design was a primer-actuated light machine gun which he developed at the National Bureau of Standards shortly after World War I. This gun showed such promise that Garand was transferred to Springfield Armory to work on development of a primer-actuated semi-automatic shoulder rifle. He subsequently designed a series of such rifles, but the one finally adopted in 1936 was gas-operated rather than primer-actuated.

Initial delivery of machine-made M1 rifles from Springfield Armory began in September 1937. As might be expected, early production rifles did not perform well in service but the majority of defects noted were due to slight but critical dimensional differences, not in accordance with the design, between the Service test models and the machine-made guns. These troubles were eventually corrected and it is a matter of record that the Ordnance Dept.



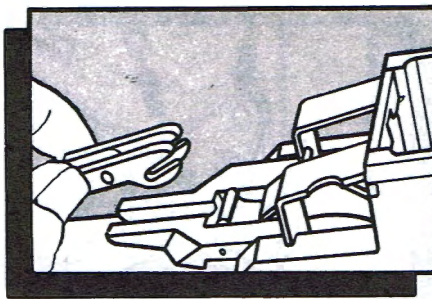
## Parts Legend

- |                        |                       |                               |                                |                                   |
|------------------------|-----------------------|-------------------------------|--------------------------------|-----------------------------------|
| 1. Barrel              | 12. Receiver          | 23. Trigger guard (old style) | 34. Hammer spring              | 45. Accelerator pin               |
| 2. Lower band          | 13. Ejector           | 24. Clip ejector              | 35. Buttplate screw, short     | 46. Operating rod catch           |
| 3. Lower band pin      | 14. Ejector spring    | 25. Hammer pin                | 36. Buttplate screw, long      | 47. Accelerator                   |
| 4. Rear handguard      | 15. Extractor         | 26. Trigger/sear (old style)  | 37. Buttplate                  | 48. Follower arm                  |
| 5. Rear handguard band | 16. Extractor spring  | 27. Hammer spring housing     | 38. Stock ferrule swivel       | 49. Operating rod spring          |
| 6. Front sight         | 17. Extractor plunger | 28. Hammer                    | 39. Stock ferrule swivel screw | 50. Follower arm pin              |
| 7. Front sight screw   | 18. Firing pin        | 29. Slide and follower        | 40. Stock ferrule              | 51. Gas cylinder lock             |
| 8. Gas cylinder        | 19. Bolt              | 30. Operating rod             | 41. Butt swivel                | 52. Gas cylinder lock screw/valve |
| 9. Clip latch pin      | 20. Safety            | 31. Bullet guide              | 42. Front handguard spacer     | 53. Rear sight                    |
| 10. Clip latch         | 21. Trigger housing   | 32. Follower rod              | 43. Front handguard ferrule    | 54. Stacking swivel               |
| 11. Clip latch spring  | 22. Trigger pin       | 33. Hammer spring plunger     | 44. Front handguard            | 55. Stacking swivel screw         |





**1** Disassembly of the M1 rifle is accomplished by first pulling rearward on the trigger guard (23) and then out and away from stock. Entire trigger housing (21) and assembly will separate from rifle. Lift receiver (12) and assembly away from stock



**2** Disengage follower rod (32) from follower arm (48) by moving rod toward muzzle end. Remove follower rod and operating rod spring (49)



**3** Next push out follower arm pin (50) from left side of receiver

during this period endured criticism which was often partisan, to say the least.

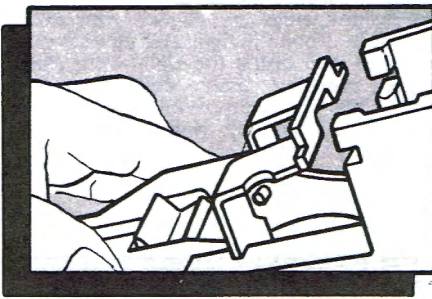
Entrance of the United States in World War II resulted in accelerated production of the M1 rifle at Springfield Armory with corollary production by Winchester Repeating Arms Co. beginning in January 1941. By V-J Day (Aug. 14, 1945) a total of 4,028,395 M1 rifles had been produced, of which Winchester manufactured 513,582. During the Korean War additional large numbers of M1 rifles were produced by Springfield Armory, and by International Harvester Co. and Harrington & Richardson, Inc.

That the M1 rifle gave a good account of itself in every theater of combat in World War II is an accepted fact. Subsequent performance in the Korean War only emphasized its general excellence as a battle rifle.

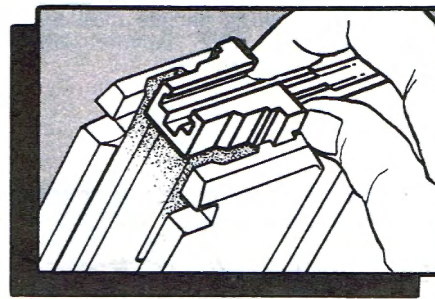
Target shooting activities in the years since the Korean War have shown the M1 to be a superior target rifle as evidenced by comparison of scores fired at all ranges with the 1903 Springfield and the fine National Match M1's and accurized Service rifles in use today.

The M1 does have certain limitations which were emphasized during the Korean War. A primary criticism is its weight, which sometimes exceeds 10 lbs. when the stock is of dense wood. The system of *en bloc* loading with an 8-round clip is also open to criticism since a partially expended clip cannot be conveniently refilled during a lull in battle. Also the infantryman often needed greater magazine capacity when confronted with massed infantry attacking at close range, especially at night when aimed fire was impossible.

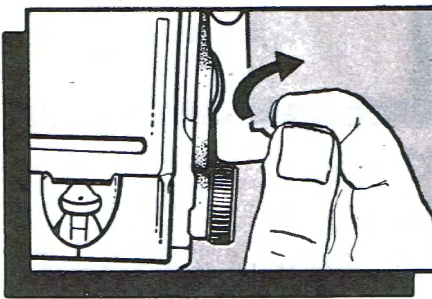
To meet the dual requirements of reasonable weight and increased magazine capacity, the Ordnance Dept. developed the M14 rifle which was adopted in 1957.



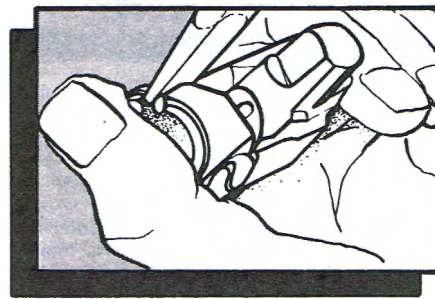
**4** Lift away bullet guide (31), follower arm, and operating rod catch (46)



**5** Reach down into receiver and lift out slide and follower (29)



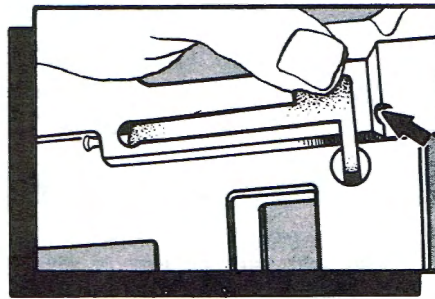
**6** Continue disassembly by pulling operating rod (30) to rear until rear surface of handle is directly under forward edge of windage knob on rear sight. Disengage guide lug on operating rod through dismount notch on receiver, with an upward and outward pressure on handle of operating rod. Remove bolt (19) by first grasping it by operating lug and then sliding it forward while lifting upward and outward with a rotating motion



**7** Hold bolt in left hand so that left thumb is over ejector (13). Insert blade of a screwdriver between extractor (15) and lower cartridge seat flange. Twist blade against extractor and unseat it. Ejector will snap up against left thumb. Remove extractor, extractor spring (16), and extractor plunger (17)



**8** Lift out ejector and ejector spring (14). Do not separate these parts. Remove firing pin (18) from rear of bolt

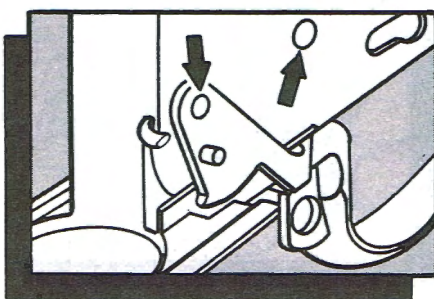


**9** To remove clip latch (10), first depress it to remove tension of clip latch spring (11). Using a drift, push forward on clip latch pin (9—arrow) to unseat it. Withdraw pin and remove clip latch and clip latch spring

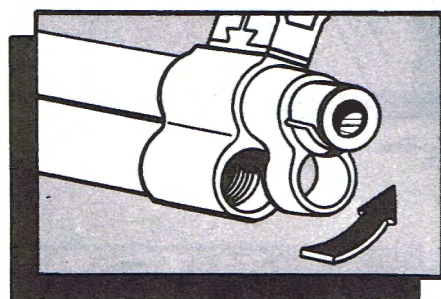




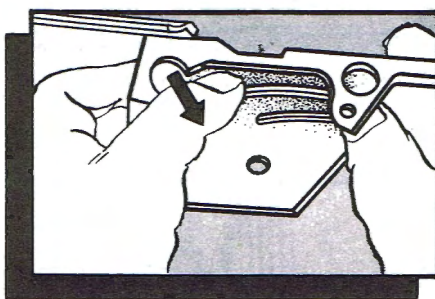
**10** Trigger housing assembly is disassembled by first closing and latching trigger guard. Squeeze trigger (26) to permit hammer to go forward. With index finger on trigger and right thumb pushing against sear portion of trigger, drift out trigger pin (22). Lift out trigger and remove hammer spring plunger (33), hammer spring (34), and hammer spring housing (27)



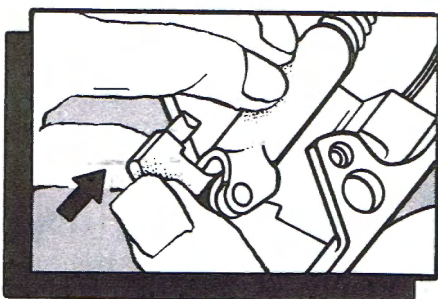
**11** Drift out hammer pin (25—left arrow) and lift out hammer (28). Unlatch trigger guard. Using a small drift or punch, push safety stud from its hole (right arrow). Remove safety (20) from trigger housing (21). Swing trigger guard down to open position and slide it rearward until wings are aligned with safety stud hole. Rotate it right and upward until hammer stop inside the right wing clears trigger housing base. Remove trigger guard. Place a screwdriver through lower hole in left side of trigger housing and pry clip ejector (24) upward and out



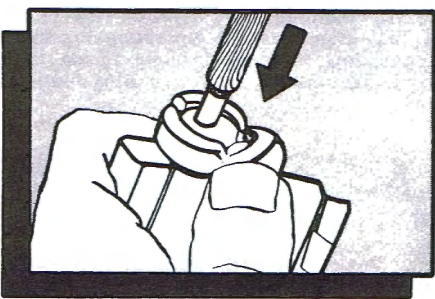
**12** With a blunt screwdriver, unscrew and remove the gas cylinder lock screw (52). Unscrew and remove gas cylinder lock (51). Next, remove gas cylinder (8) by tapping it lightly forward on bayonet stud with a piece of soft wood. Do not burr or damage the internal splines. On rifles with gas cylinders modified by a cut extending from front sight base dovetail downward to lower splines, it is necessary to loosen front sight screw before removing gas cylinder to prevent damage to barrel and gas cylinder



**13** Reassemble the rifle in reverse order. To reassemble trigger housing, first place clip ejector in position in trigger housing with short arm facing up and long arm in its slot at front end of housing. Position loop of clip ejector on top of its stud and hold it there. Hold long arm up in its slot and exert downward pressure on rear part of spring. Long arm will snap into notch on trigger housing base



**14** Replace trigger guard, safety, hammer, and hammer pin. Assemble hammer spring housing, spring, and plunger as a unit. Place the plunger in its seat on hammer. Make sure that open side of spring housing is toward safety. Hold these parts in a raised position with left thumb and fingers. Insert trigger and trigger pin. Press forward on sear, and seat pin by pressing on its head



**15** When reassembling bolt, first insert firing pin and then, with bolt face upward, place ejector and ejector spring into hole in face of bolt. Replace extractor spring and plunger. Put stud of extractor into its hole in bolt. Exert thumb pressure on extractor and, using a piece of hardwood dowel, depress ejector into face of bolt until extractor seats with an audible click

## M1 National Match Rifles

*I obtained an M1 National Match rifle some time ago which looked good, but on examination I noticed longitudinal movement in the front handguard (this part should be fixed to the lower band in National Match rifles) and the trigger housing assembly was not marked with last four digits of the rifle's serial number as also required in NM rifles. Can these discrepancies be explained?*

**Answer:** The explanation is not known. The following gives some past experience.

In 1966, Frankford Arsenal had occasion to employ five M1 National Match rifles in an ammunition test. They were obtained from Erie Army Depot. All five rifles were found to be out of National Match rifle specifications in at least one or another respect, most of them in several respects. In general, the rifles deviating least from specifications shot most accurately.

Inquiry of Springfield Armory, where M1 National Match rifles were assembled, brought the answer that the rifles never left the Armory in that condition. All National Match rifles without exception were inspected and tested, and had to meet the specifications completely before acceptance and shipment.

Erie Army Depot was the principal storage point for National Match rifles. It adjoined Camp Perry, and rifles were issued from the Depot for use in the National Matches and returned to store after the matches.

Both Springfield Armory and Erie Army Depot have been closed. There appears to be little likelihood now of ascertaining how the non-specification condition in M1 National Match rifles came about. Note however that National Match rifles were classified either as new or as used but serviceable.

It seems evident that the condition was in used rifles. Two possible ways it may have arisen are:

- Rifles were tinkered while on issue to individuals.

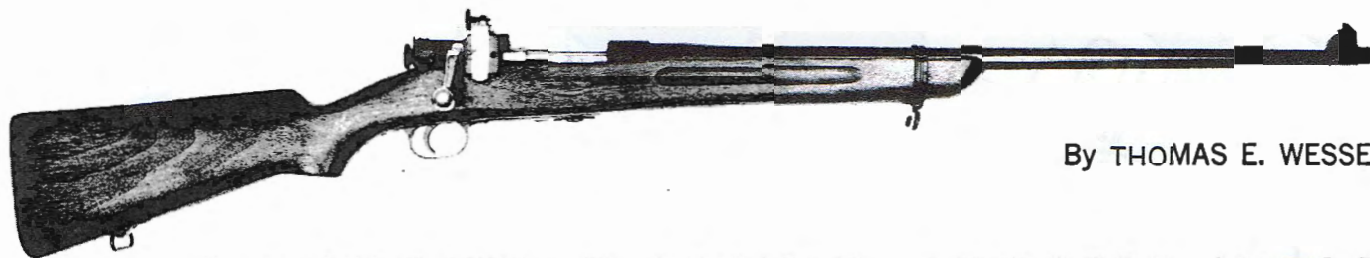
- Rifles returned after match use were reconditioned, but not to National Match specifications, before being put back in store.

Of course, other explanations also may be possible.

It is established that the condition does exist. The owner of an M1 National Match rifle who is interested in the most accurate shooting with it should therefore inspect it thoroughly for compliance with specifications. The construction and performance specifications of M1 National Match rifles were given by THE AMERICAN RIFLEMAN in the detailed article "The M1 National Match Rifle", April 1966, p. 34-37. If deviations in an individual rifle are found, the correction usually is evident.

As a matter of interest, the application to M1 service rifles of target refinements corresponding to those of National Match rifles is described with illustrations in THE AMERICAN RIFLEMAN article "Accurizing The M1 Rifle", July 1965, p. 30-33.—E.H.H.





By THOMAS E. WESSEL

# U. S. SPRINGFIELD MODEL 1922M2 RIFLE

THE U. S. M1922M2 rifle, chambered for the cal. .22 long rifle cartridge, was the last in a series of cal. .22 target rifles manufactured at Springfield Armory. It was issued for troop training and was also furnished to high schools and colleges for marksmanship training. It was also sold to NRA members through the office of the Director of Civilian Marksmanship (DCM).

Manufacture was discontinued during World War II, but repair functions were continued for several years. The

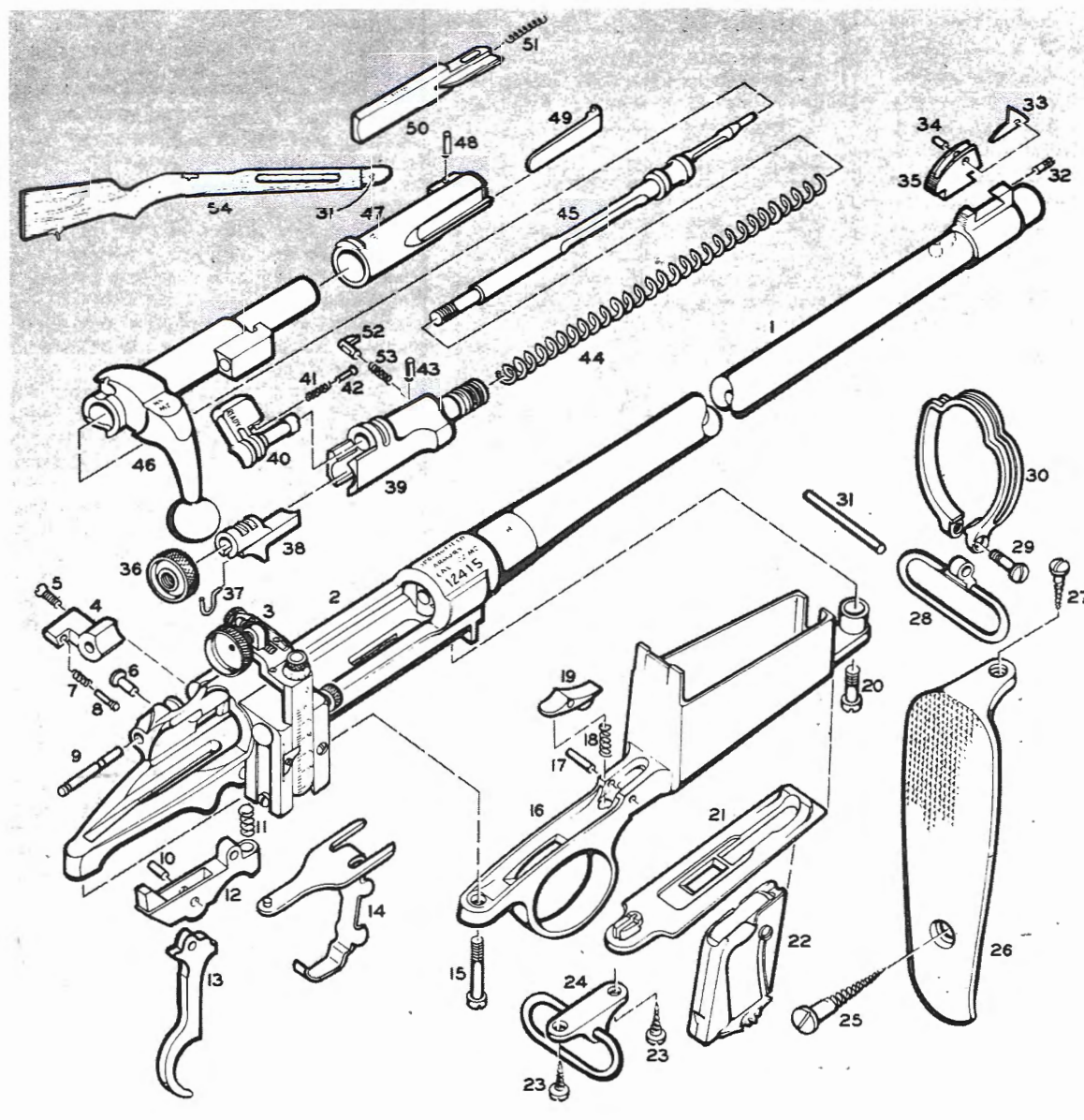
M1922M2 rifle is now obsolete.

The M1922M2 (M1922MII) is a modification of the M1922M1 (M1922MI) which was in turn developed from the Model 1922 rifle first made in that year. Significant features of the M1922M2 rifle in comparison with earlier models are its shortened striker fall, shortened bolt travel, and provision for headspace adjustment within the bolt handle assembly (final version).

The M1922M1 rifle was converted to M2-type by installing the later M2 bolt.

Receiver markings on M1922M2 rifles are somewhat confusing since arsenal modifications of earlier models to M2-type took place after design of the M2 version had been standardized and its manufacture begun.

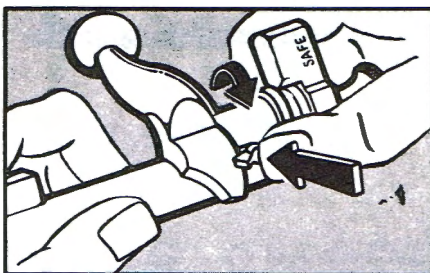
The model designations of modified rifles were changed to indicate that alteration had been performed. Thus, there are several receiver markings extant for the M2 rifle. Those with the letters A or B stamped after the serial number are modified arms.



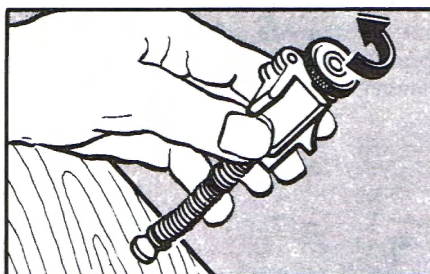
## Parts Legend

1. Barrel
2. Receiver
3. Rear sight
4. Ejector stop
5. Ejector stop screw
6. Sear retaining pin
7. Ejector stop plunger spring
8. Ejector stop plunger
9. Spindle
10. Trigger pin
11. Sear spring
12. Sear
13. Trigger
14. Magazine retaining spring
15. Rear guard screw
16. Trigger guard
17. Floorplate catch pin



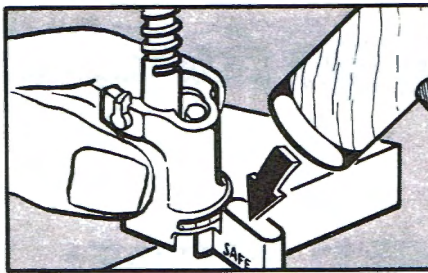


**1** Remove bolt assembly by cocking rifle and turning safety lock (40) until thumbpiece is vertical. Rotate ejector stop (4) to center notch position and withdraw bolt assembly. Remove firing pin mechanism from bolt assembly by depressing bolt sleeve lock (52) with thumbnail. Then unscrew bolt sleeve (39) ¼ turn until bolt head can be pulled forward and away from bolt handle. Then remove firing pin mechanism from bolt handle

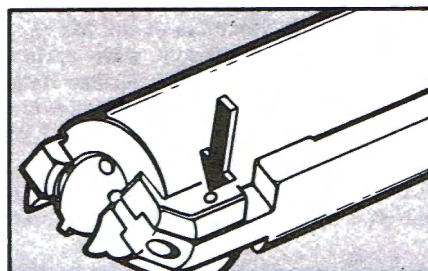


**2** Release safety lock and insert striker end of firing pin (45) into ¼" hole in workbench and push inward on bolt sleeve to compress mainspring (44). Unscrew firing pin nut (36) and slowly release tension on mainspring until cocking piece (38) and bolt sleeve separate from firing pin. Then remove the mainspring from firing pin

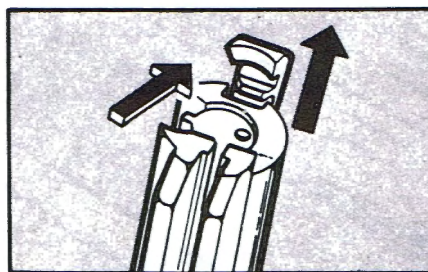
- |                              |                                   |
|------------------------------|-----------------------------------|
| 18. Floorplate catch spring  | 36. Firing pin nut                |
| 19. Floorplate catch         | 37. Firing pin nut locking spring |
| 20. Front guard screw        | 38. Cocking piece                 |
| 21. Floorplate               | 39. Bolt sleeve                   |
| 22. Magazine                 | 40. Safety lock                   |
| 23. Butt swivel screw (2)    | 41. Safety lock plunger spring    |
| 24. Butt swivel              | 42. Safety lock plunger           |
| 25. Lower buttplate screw    | 43. Bolt sleeve lock pin          |
| 26. Buttplate                | 44. Mainspring                    |
| 27. Top buttplate screw      | 45. Firing pin                    |
| 28. Front swivel             | 46. Bolt handle                   |
| 29. Front swivel screw       | 47. Bolt head                     |
| 30. Front band               | 48. Ejector retaining pin         |
| 31. Front band retaining pin | 49. Extractor                     |
| 32. Sight base screw         | 50. Ejector                       |
| 33. Front sight              | 51. Ejector spring                |
| 34. Front sight pin          | 52. Bolt sleeve lock              |
| 35. Movable stud             | 53. Bolt sleeve lock spring       |
|                              | 54. Stock                         |



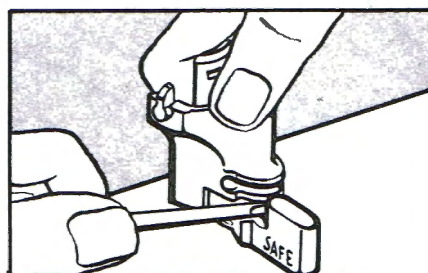
**3** Remove safety lock (40) from bolt sleeve by turning it to dismounting bevel position on bolt sleeve halfway between the ready and vertical position. Tap front face of thumbpiece with plastic hammer to disengage it from bolt sleeve



**4** Remove ejector (50) by drifting out ejector retaining pin (48). Ejector and ejector spring (51) may be withdrawn from face of bolt head (47)



**5** Extractor (49) may be removed by forcing lip end away from bolt head face and disengaging its tongue from slot in bolt head and simultaneously forcing it forward and off bolt head



**6** Other disassembly is readily apparent. Reassemble rifle in reverse order. To assemble safety lock and bolt sleeve, insert spindle of the safety lock into bolt sleeve hole. Then, with thumbpiece vertical, insert small screwdriver blade between safety lock spindle and safety lock plunger (42), forcing it into thumbpiece until it slips over the edge of sleeve. Continued pressure on safety lock thumbpiece together with withdrawal of screwdriver completes assembly

## Safeties Do Fail

Washington C.H., Ohio

Editor:

After attempting a shot at a hawk which I decided not to fire, I took my shotgun in my left hand and, holding the gun vertically, set the butt down sharply on a log. The arm discharged instantly. I was frightened, but as I was not injured I sat and contemplated what happened and why.

When I nearly fired at the hawk I lightly pressed the trigger. In doing this, the trigger had moved the sear and left it standing on the edge of the hammer notch. Then, when I set the butt down on the log with some jar, the hammer was released and the arm discharged. This in spite of the fact that the safety was set at "safe". To prove this I opened the gun and the left shell was ejected. I had intended using the left barrel on the hawk and had applied pressure to the rear trigger.

It is easy to prevent a gun from accidental firing, from the cause outlined above, provided the arm is in good condition.

Every now and then when hunting, and always immediately after you almost fire but don't, fully open and close the action of your gun. This should be done with the muzzle pointing away from every living thing. The simple precaution of opening and closing the action leaves the several parts of the lock in correct engagement so there is less danger of the sear and hammer or the trigger and hammer accidentally parting company and causing a premature discharge.

Sometimes a gun develops wear in the hammer notch so that the cocked hammer may fall if the gun is jarred.

Frequently jar a gun when cocked and unloaded. A strong click will be heard if the hammer falls. When this happens, do not use the arm until a first-class repair has been made.

Keep your wits when handling a gun, and never allow it to point towards a companion or yourself. Do not load until the hunting grounds are reached. As soon as hunting is ended the gun should be unloaded. After the gun is unloaded, open and close the action at least twice to be sure no live ammunition remains.

When hunters assemble, the action of each gun should be opened. This simple precaution is important and should not be overlooked.

Most guns have a safety. With many designs, the safety blocks the triggers only. The sears in most guns, operating between the triggers and the hammers, derive no benefit from the safety. The sear can let the hammer fall while the safety is blocking the trigger perfectly.

Nevertheless, the safety with its several imperfections, performs an important function, particularly when it is on top of the grip or otherwise so placed that it may be thrown off as the gun is raised to shoot.

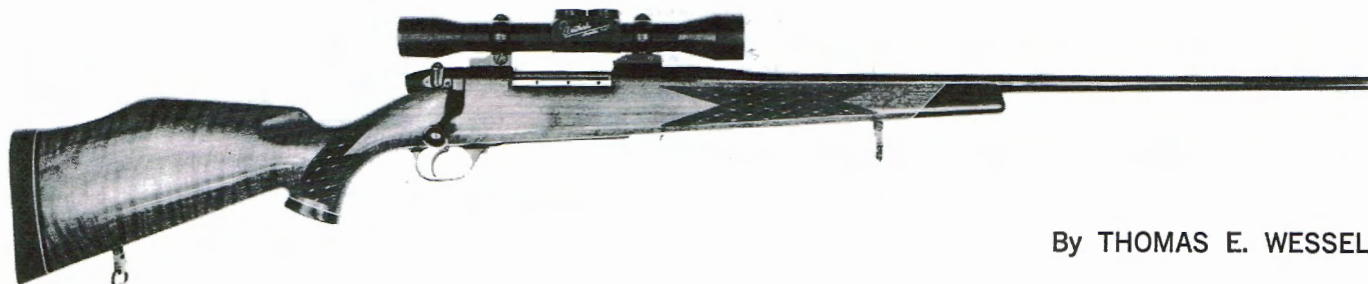
WILLIS O. C. ELLIS



# WEATHERBY

## MARK V

### RIFLE



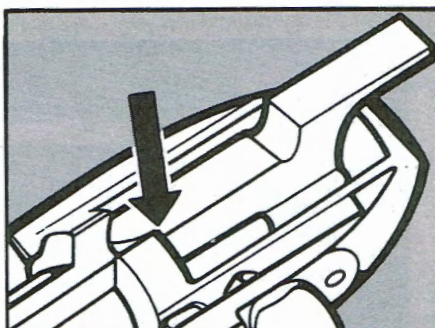
By THOMAS E. WESSEL

THE Weatherby Mark V bolt-action center-fire rifle was introduced in 1958. Action of this rifle is of basic turn-bolt type with locking lugs on the forepart of the bolt engaging locking recesses within the receiver ring. There are 9 locking lugs in 3 series approximately 120° opposed. Bolt lift required to unlock the action is only 54° as against 90° for the ordinary dual-lug turn-bolt action. Lug portion of the bolt head is the same diameter as the body, which eliminates the necessity for locking lug raceways in the receiver. The bolt has no guide ribs or lugs to align and retain it within the receiver. This is done by the bolt stop stud which rides in a groove cut in the bolt body. Cocking is done on opening of the bolt.

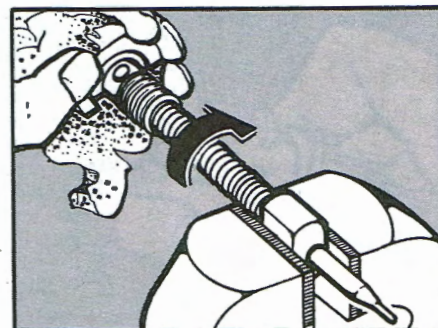
An interesting feature in this action is the deep counterbore in the face of the bolt which is designed to shroud the cartridge head. The breech face is in turn counterbored to enclose the bolt head and this counterbore provides near maximum support of the head of the cartridge case.

Rear of the cocking piece is shrouded by the bolt sleeve to provide a gas protection feature. A cocking indicator bar extends from under the bolt sleeve when the action is cocked.

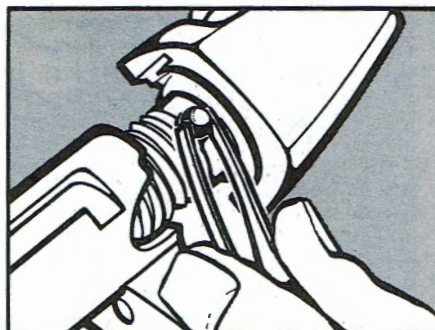
The Mark V rifle was initially made with major action parts machined from investment castings, but forgings are now used. The safety was formerly located to the right of the receiver tang, but is now mounted in the bolt sleeve. The bolt body was formerly smooth, but now contains several longitudinal flutes to reduce friction and act as troughs for dust and grit.



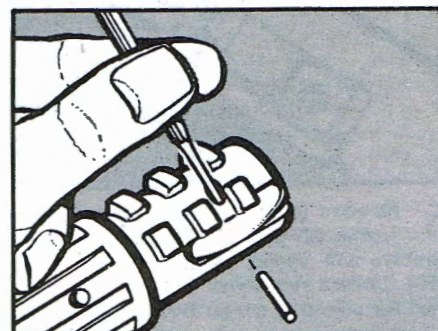
**1** Commence disassembly by opening bolt and withdrawing rearward. Pull trigger (31) as far as possible and remove bolt from receiver (3). Engage step of cocking piece (15) on edge of bench and move it rearward approximately 1/8". Rotate cocking piece onto its engaging shoulder in bolt sleeve (13, arrow)



**3** With bolt now removed from firing pin assembly, release cocking piece from its engaging shoulder. It will move forward into slot in bolt sleeve. Place lug of firing pin (11) in small vise with padded jaws, and using cotton waste to protect hand, unscrew bolt sleeve from firing pin, maintaining a steady pressure against firing pin spring (12) to prevent parts from flying when firing pin disengages from cocking piece. When reassembling, be quite sure that the retaining ball (14) lies on the flat of firing pin



**2** Unscrew bolt (4) from firing pin assembly. After one or 2 turns of bolt, remove firing pin retaining ball (14) through helical opening in bolt. Use tweezers to facilitate this

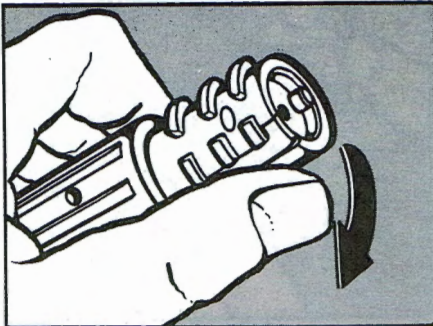


**4** Remove extractor (6), or ejector (9), by first drifting out extractor (ejector) pin (7 or 8). Leave drift punch in hole

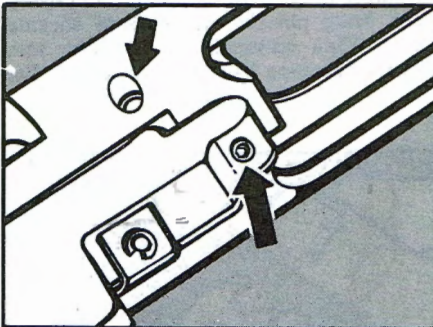


## Parts Legend

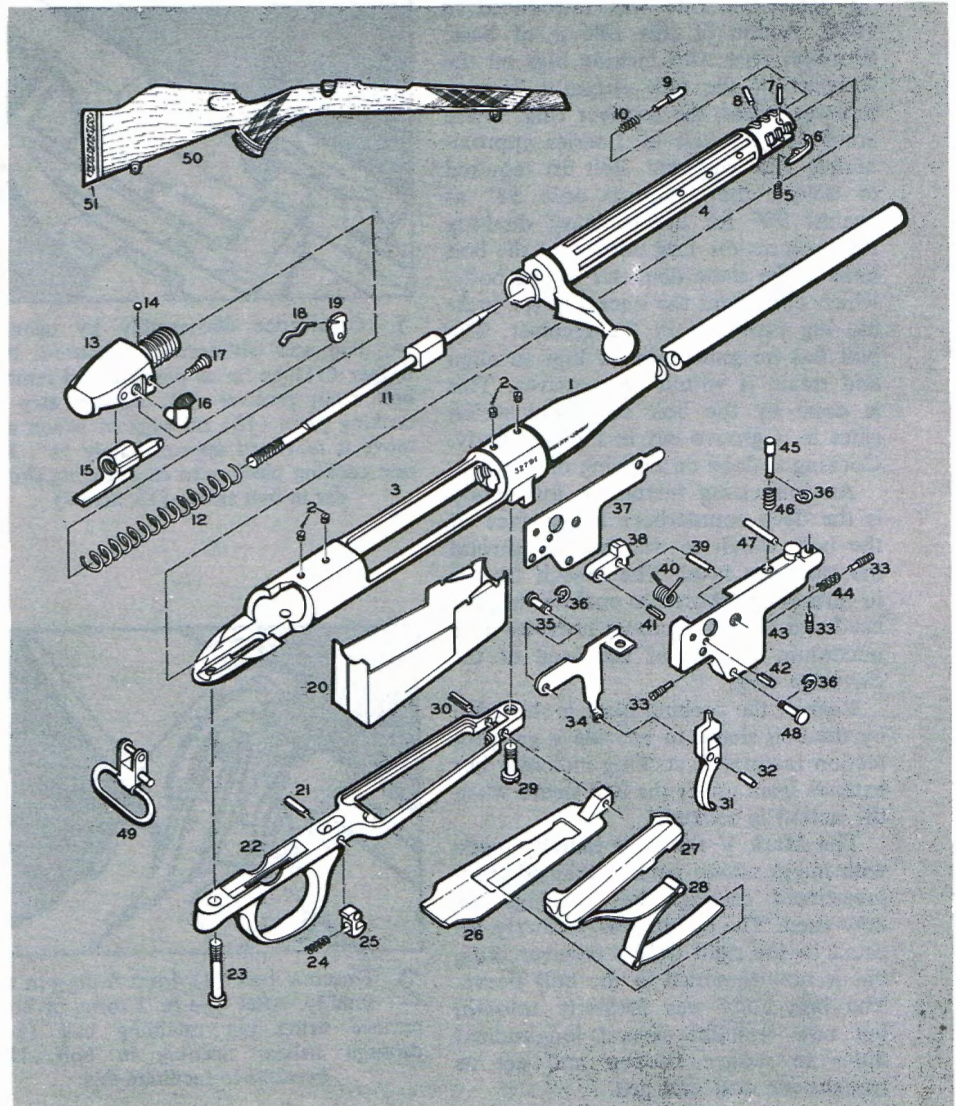
- |                                     |                               |
|-------------------------------------|-------------------------------|
| 1. Barrel                           | 27. Magazine follower         |
| 2. Filler screw (4)                 | 28. Follower spring           |
| 3. Receiver                         | 29. Front trigger guard screw |
| 4. Bolt                             | 30. Floorplate pin            |
| 5. Extractor spring                 | 31. Trigger                   |
| 6. Extractor                        | 32. Trigger release pin       |
| 7. Extractor pin                    | 33. Stop screw (3)            |
| 8. Ejector pin                      | 34. Bolt release              |
| 9. Ejector                          | 35. Bolt release pin          |
| 10. Ejector spring                  | 36. Tru-arc-ring (3)          |
| 11. Firing pin                      | 37. Side plate                |
| 12. Firing pin spring               | 38. Sear                      |
| 13. Bolt sleeve                     | 39. Sear lock pin             |
| 14. Firing pin retaining ball       | 40. Sear torsion spring       |
| 15. Cocking piece                   | 41. Sear pin                  |
| 16. Safety lever                    | 42. Sear torsion spring pin   |
| 17. Safety hook screw               | 43. Trigger housing           |
| 18. Safety hook spring              | 44. Trigger spring            |
| 19. Safety hook                     | 45. Bolt stop                 |
| 20. Magazine box                    | 46. Bolt stop spring          |
| 21. Magazine floorplate release pin | 47. Trigger housing pin       |
| 22. Trigger guard                   | 48. Trigger pin               |
| 23. Rear trigger guard screw        | 49. Swivel assembly (2)       |
| 24. Floorplate catch spring         | 50. Stock                     |
| 25. Magazine floorplate catch       | 51. Buttplate *               |
| 26. Magazine floorplate             | * Permanently bonded to stock |



**5** Compress extractor (ejector) with thumb and remove drift punch. Release extractor (ejector) slowly until spring (5 or 10) is no longer loaded. Remove spring by tapping on wood surface. It will fall out



**6** Remove front and rear trigger guard screws (29 and 23), trigger guard assembly, and barrel assembly from stock (50). Loosen stop screw (33, lower arrow) used for adjusting trigger housing. Drift out trigger housing pin (47, upper arrow) and remove trigger assembly from bottom of receiver. Further disassembly of trigger housing is not recommended. Reassemble Mark V in reverse

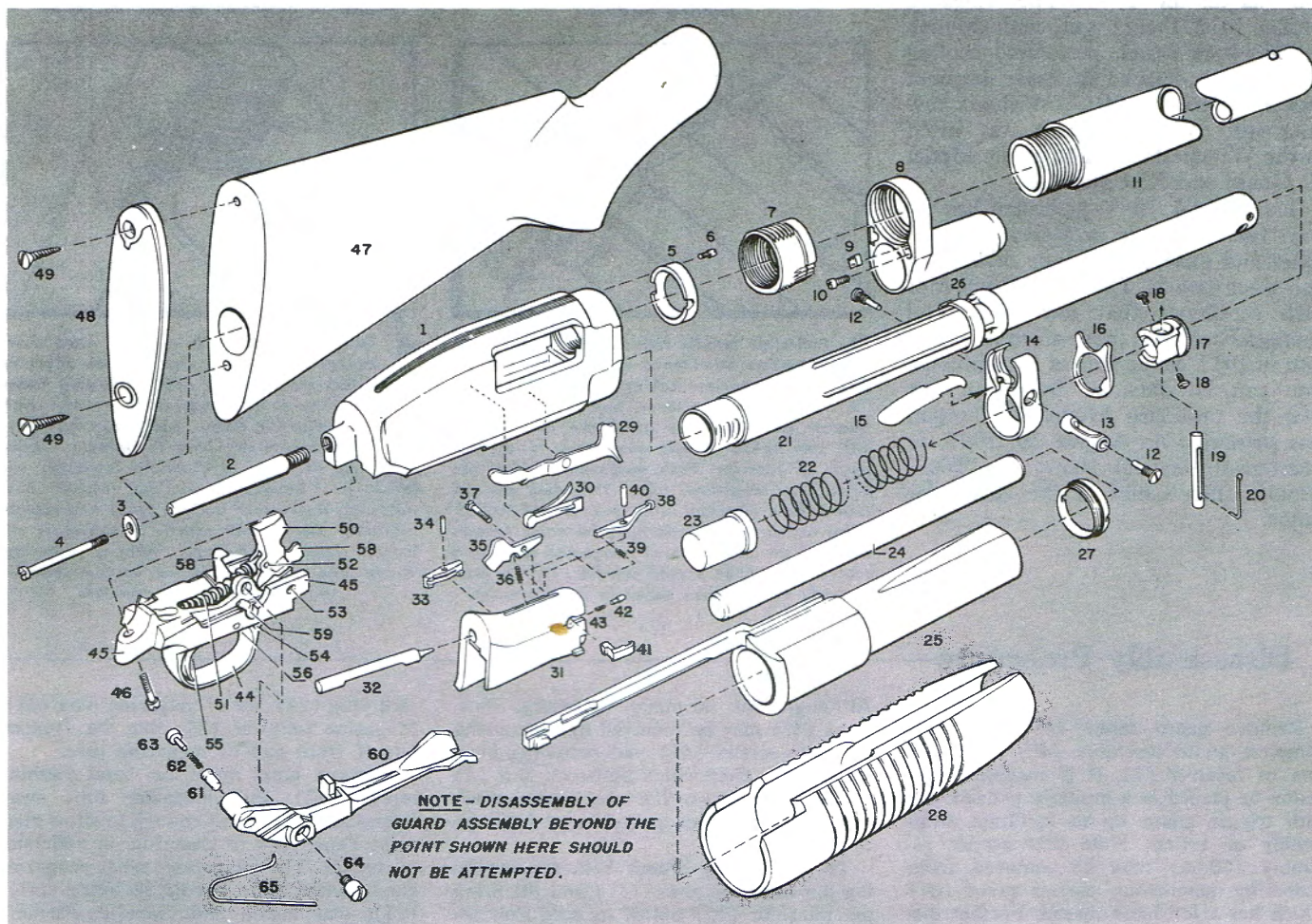






# WINCHESTER MODEL 12 REPEATING SHOTGUN

By James M. Triggs



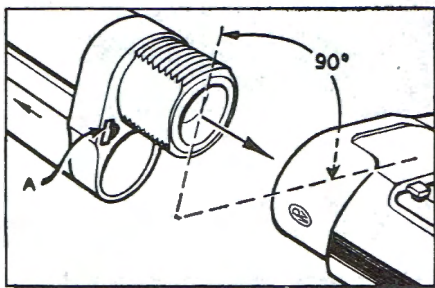
## LEGEND

- |  |   |   |
|--|---|---|
| 1. Receiver                              | 22. Magazine spring                     | 44. Guard                                 |
| 2. Receiver shank                        | 23. Magazine follower                   | 45. Guard—complete assembly               |
| 3. Buttstock bolt washer                 | 24. Three-shell wooden plug             | 46. Guard screw                           |
| 4. Buttstock bolt                        | 25. Action slide                        | 47. Buttstock                             |
| 5. Barrel chamber ring                   | 26. Action slide spring                 | 48. Buttplate                             |
| 6. Barrel chamber ring screw             | 27. Action slide sleeve screw cap       | 49. Buttplate screws (2)                  |
| 7. Adjusting sleeve                      | 28. Action slide handle                 | 50. Hammer                                |
| 8. Receiver extension                    | 29. Cartridge cutoff                    | 51. Hammer spring and guide rod           |
| 9. Adjusting sleeve lock                 | 30. Ejector and ejector spring          | 52. Hammer spring guide rod pin           |
| 10. Adjusting sleeve lock screw          | 31. Breech bolt                         | 53. Hammer pin                            |
| 11. Barrel                               | 32. Firing pin                          | 54. Trigger lock assembly                 |
| 12. Magazine band bushing screws (2)     | 33. Breech bolt retaining lever         | 55. Trigger                               |
| 13. Magazine band bushing                | 34. Breech bolt retaining lever pin     | 56. Trigger pin                           |
| 14. Magazine band                        | 35. Firing pin retractor                | 57. Trigger spring (not shown in drawing) |
| 15. Action slide handle retaining spring | 36. Firing pin retractor spring         | 58. Action slide lock and spring          |
| 16. Magazine plug stop                   | 37. Firing pin retractor screw          | 59. Action slide lock pivot               |
| 17. Magazine plug                        | 38. Extractor—left-hand                 | 60. Carrier                               |
| 18. Magazine plug screws (2)             | 39. Extractor spring—left-hand          | 61. Carrier plunger                       |
| 19. Magazine locking pin                 | 40. Extractor pin—left-hand             | 62. Carrier plunger spring                |
| 20. Magazine locking pin spring          | 41. Extractor—right-hand                | 63. Carrier plunger screw                 |
| 21. Magazine tube                        | 42. Extractor spring plunger—right-hand | 64. Carrier pivot                         |
|  | 43. Extractor spring—right-hand         | 65. Carrier spring                        |

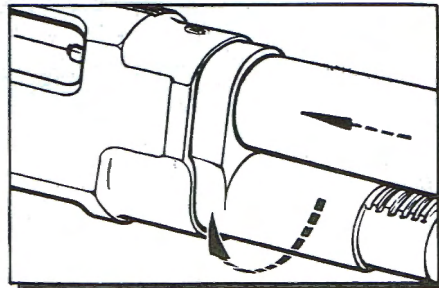


**F**EW repeating shotguns have enjoyed the long-time popularity accorded the Model 12 Winchester since its introduction in 1912. Developed by Thomas C. Johnson, the Model 12 (originally designated as the Model 1912) was initially offered in 20-gauge which made it not only the first Winchester shotgun of that gauge but also the first hammerless slide-action repeating shotgun to bear the Winchester brand name. By 1914 it was also available in both 12-gauge and 16-gauge, with the 28-gauge version coming on the market in 1934. The 12-gauge Model 1912 Trench gun with 20-inch cylinder-bore barrel, perforated cooling sleeve, and detachable knife bayonet was introduced in 1917. Without bayonet and cooling sleeve it was listed in the Winchester catalog as the Model 12 Guard and Riot gun.

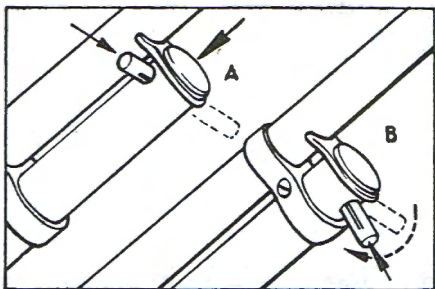
The Model 12 Winchester has always been available in a great array of styles and grades to include field, trap, and skeet models. The basic design is of such excellence that few mechanical changes have been made since its inception in 1912. Some idea of total production can be obtained from the fact that the millionth Model 12 shotgun was presented on August 30, 1943, to Lieutenant General Henry H. "Hap" Arnold, then Chief of the Army Air Force.



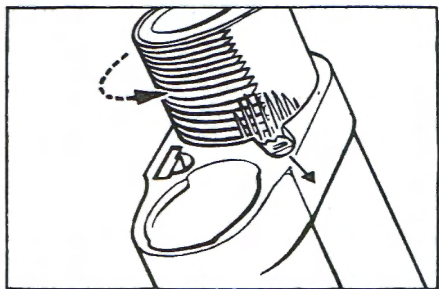
**1** To assemble barrel to receiver pull trigger and be sure action slide handle is fully forward and slide is flush with receiver extension as shown at "A" to prevent slide bar marring receiver



**2** Hold receiver and barrel assemblies at right angles to each other, insert threaded barrel shank into receiver, and turn barrel assembly clockwise until contours of receiver and receiver extension coincide as shown



**3** Pull-slide handle fully rearward and push magazine downward as far as it will go. Push out magazine locking pin as shown at "A". Using pin as a lever, turn magazine one-quarter turn clockwise as shown at "B". Pin will not rotate unless magazine is at full depth in receiver. Push magazine locking pin back into magazine tube. Threaded end of tube is now engaged with receiver and locked. Bring action slide handle fully forward. Arrows stamped on underside of magazine tube and receiver extension should coincide. Gun is now ready to fire. Take down in reverse order



**4** To tighten barrel in receiver, take down barrel and receiver and remove adjusting sleeve lock screw. Draw down adjusting sleeve lock as shown, disengaging its notches from those on adjusting sleeve. Turn adjusting sleeve one notch counterclockwise to tighten. Turning adjusting sleeve in a clockwise direction will loosen joint between barrel and receiver. Push adjusting sleeve lock back in place and replace adjusting sleeve lock screw. If barrel is still loose, repeat procedure, turning adjusting sleeve one or two notches counterclockwise until desired fit is achieved

## Disassembly Procedure

Remove guard screw (46) and drop complete guard assembly (45) from bottom of receiver (1). It is suggested that action be placed in a properly padded vise with trigger guard up to facilitate disassembly of action. Note that carrier assembly (60-65) may be removed from guard by unscrewing carrier pivot (64) which has a left-hand thread. Further disassembly of parts contained within guard assembly should definitely not be attempted and replacement of parts 50 through 59 should be made by Winchester factory only. Drop cartridge cutoff (29) out of receiver.

The breech bolt (31) may be removed as follows: with breech bolt in its full forward position, gently pry stud of ejector (30) from its seat in the inside of receiver wall and slide ejector to rear and out from under breech bolt and thence out of receiver. Before attempting to remove breech bolt be sure action slide is disengaged from breech bolt. Depress rearmost arms of breech bolt retaining lever (33) and slide breech bolt almost all the way to its rearmost position. Then, lifting breech bolt by its back end first, guide left-hand and right-hand extractors up through vertical slots on inside of receiver walls.

Although not normally necessary, buttstock (47) may be removed by unscrewing buttplate screws (49) and removing buttplate (48), after which buttstock bolt (4) can be unscrewed with a long, heavy screwdriver and buttstock pulled away from receiver.

To disassemble breech bolt, remove firing pin retractor screw (37) and lift firing pin retractor (35) out of its seat. Pull firing pin retractor spring (36) out of its hole. The left-hand extractor (38) and spring (39) and breech bolt retaining lever (33) are removed by drifting out their respective retaining pins (40 and 34). Remove right-hand extractor (41) by slipping blade of a small screwdriver between plunger (42) and extractor (41) and easing extractor up out of its hole in side of breech bolt. Remove spring (43) and plunger (42) toward front.

To take down barrel assembly, depress magazine locking pin spring (20) with blade of a small screwdriver and remove magazine locking pin (19) from magazine tube (21). Remove the magazine plug screws (18) while holding front of magazine plug (17) to prevent its sudden ejection. Allow magazine plug and magazine spring (22) to extend slowly to spring's full length and lift spring and wood three-

shot plug (24) out of magazine tube (21). Magazine follower (23) may be dropped out of front end of magazine tube.

Remove both magazine band bushing screws (12). Pull magazine tube away from barrel (11) just enough to allow magazine band (14) to clear lug on underside of barrel. The magazine tube, magazine band, action slide handle retaining spring (15), and action slide handle assembly (25-28) may be withdrawn toward front of barrel. The magazine band (14) and magazine band bushing (13) may now be removed from magazine tube. Ordinarily, disassembly of action slide (25) from action slide handle (28) and magazine tube (21) is not recommended and is seldom if ever necessary. To separate these parts, action slide sleeve screw cap (27) must first be removed with a special spanner wrench.

Removal of receiver extension (8) should not be attempted. Remove adjusting sleeve lock screw (10) and slide adjusting sleeve lock (9) away from adjusting sleeve (7) and unscrew adjusting sleeve from barrel. The barrel chamber ring (5) may be removed by unscrewing barrel chamber ring screw (6).

Reassembly of the Model 12 is accomplished in reverse order.





By JAMES M. TRIGGS

# WINCHESTER MODEL 21 SHOTGUN

THE Winchester Model 21 hammerless double-barrel shotgun, introduced in 1931, was the first arm of this type manufactured by the Winchester firm. Earlier double-barrel shotguns bearing the Winchester name were made in England and were sold in the Winchester organization's retail store in

New York from 1879 until 1884.

The frame of the Model 21 shotgun is of one-piece construction and is made from a forging. The barrels are mechanically interlocked by dovetail half-lugs on each barrel. Coil springs are used to operate the hammers and selective ejectors. A floating barrel stop is pro-

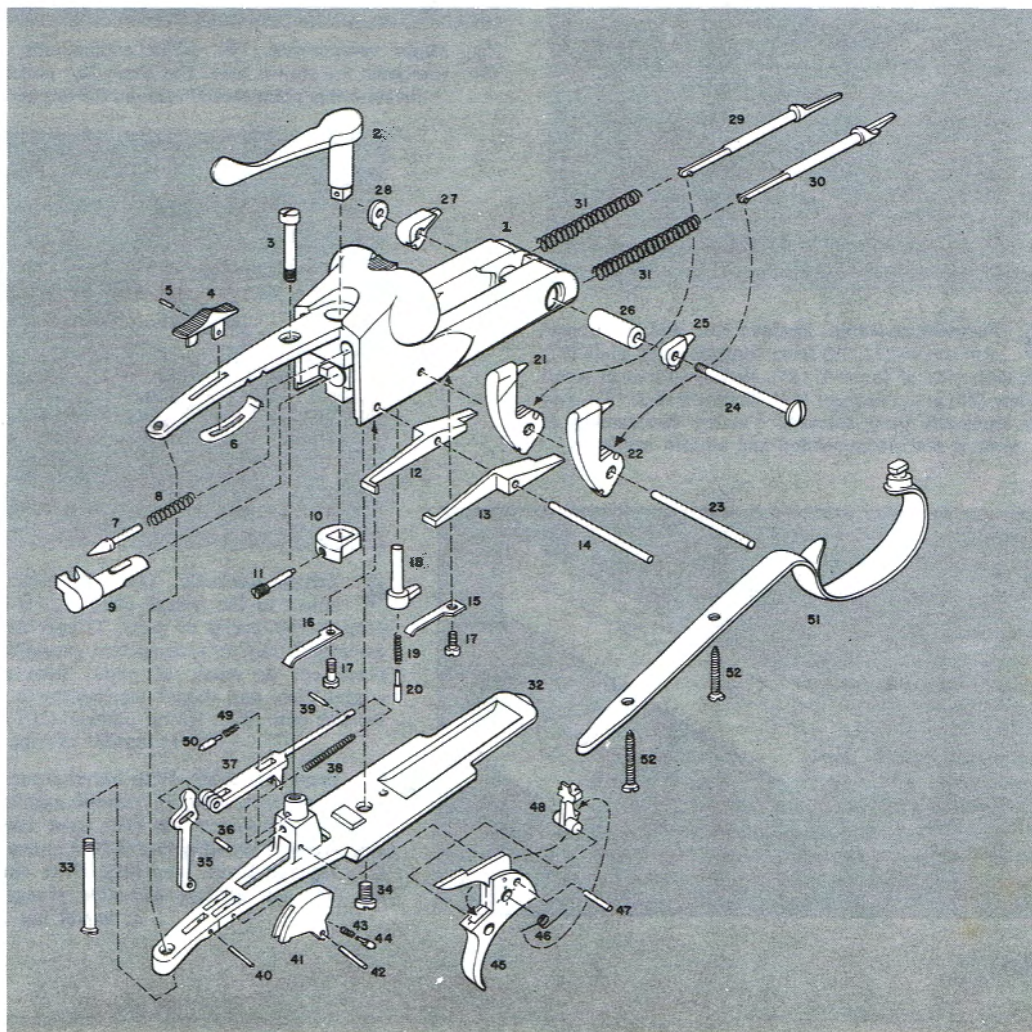
vided on the forward part of the lug to prevent battering of the hinge.

The Model 21 was produced initially with double trigger, but the single-trigger version followed shortly thereafter.

Production chronology of the Model 21 is complicated by the fact that manufacture of the standard-grade gun was

## Parts Legend

- |  |  |   |                                     |
|--|--|---|-------------------------------------|
| 1. Frame   | 47. Trigger pin  | 60. Forearm retainer                      | 74. Forearm catch spring            |
| 2. Top-lever   | 48. Shift lever and shift lever button (shown assembled) | 61. Forearm retainer spring               | 75. Forearm (not shown; see Fig. 2) |
| 3. Upper tang screw  | 49. Trigger spring                                       | 62. Forearm catch                         | 76. Barrels                         |
| 3A. Upper tang screw bushing (not shown; see Fig. 1)                   | 50. Trigger spring plunger                               | 63. Ejection hammer, right                | 77. Extractor, left                 |
| 4. Safety slide  | 51. Guard bow  | 64. Ejection hammer, left                 | 78. Extractor, right                |
| 5. Safety slide spring stop pin  | 52. Guard bow screws (2)                                 | 65. Ejection hammer springs (2)           | 79. Locking bolt stop screw         |
| 6. Safety slide spring   | 52A. Buttstock (not shown; see Fig. 2)                   | 66. Ejection hammer spring guide rods (2) | 80. Extractor stop screw            |
| 7. Top-lever plunger   | 53. Forearm shoe   | 67. Ejection sear, left                   | 81. Barrel stop                     |
| 8. Top-lever spring  | 54. Ejection sear pin                                    | 68. Ejection sear, right                  | 82. Barrel stop spring              |
| 9. Locking bolt  | 55. Ejection hammer roll pin                             | 69. Forearm recoil abutment               | 83. Barrel stop screw               |
| 10. Locking bolt lever   | 56. Forearm retainer pin                                 | 70. Forearm recoil screw                  | 84. Extractor plunger stop pin      |
| 11. Locking bolt lever screw   | 57. Forearm catch pin                                    | 71. Forearm catch plate                   | 85. Extractor plunger               |
| 12. Sear, left   | 58. Ejection hammer roll                                 | 72. Rear forearm screw                    | 86. Front sight                     |
| 13. Sear, right  | 59. Ejection sear spring (2)                             | 73. Front forearm screw                   | 87. Rear sight                      |
| 14. Sear pin   |  |   |                                     |
| 15. Sear spring, right   |  |   |                                     |
| 16. Sear spring, left  |  |   |                                     |
| 17. Sear spring screws (2)   |  |   |                                     |
| 18. Locking bolt catch   |  |   |                                     |
| 19. Locking bolt catch spring  |  |   |                                     |
| 20. Locking bolt catch spring plunger                                  |  |   |                                     |
| 21. Hammer, left   |  |   |                                     |
| 22. Hammer, right  |  |   |                                     |
| 23. Hammer pin   |  |   |                                     |
| 24. Cocking lever screw  |  |   |                                     |
| 25. Cocking lever, right   |  |   |                                     |
| 26. Joint pin  |  |   |                                     |
| 27. Cocking lever, left  |  |   |                                     |
| 28. Cocking lever screw nut  |  |   |                                     |
| 29. Cocking rod, left  |  |   |                                     |
| 30. Cocking rod, right   |  |   |                                     |
| 31. Hammer springs (2)   |  |   |                                     |
| 32. Trigger plate  |  |   |                                     |
| 33. Trigger plate tang screw   |  |   |                                     |
| 34. Trigger plate screw  |  |   |                                     |
| 35. Safety lever   |  |   |                                     |
| 36. Safety lever operating rod pin                                     |  |   |                                     |
| 37. Safety lever operating rod   |  |   |                                     |
| 38. Safety lever operating rod returning spring                        |  |   |                                     |
| 39. Safety lever operating rod returning spring pin                    |  |   |                                     |
| 40. Safety lever pivot pin   |  |   |                                     |
| 41. Timing weight  |  |   |                                     |
| 42. Timing weight pin  |  |   |                                     |
| 43. Timing weight plunger spring                                       |  |   |                                     |
| 44. Timing weight plunger  |  |   |                                     |
| 45. Trigger (shown assembled—comprises trigger, trigger blade and pin) |  |   |                                     |
| 46. Shift lever spring   |  |   |                                     |

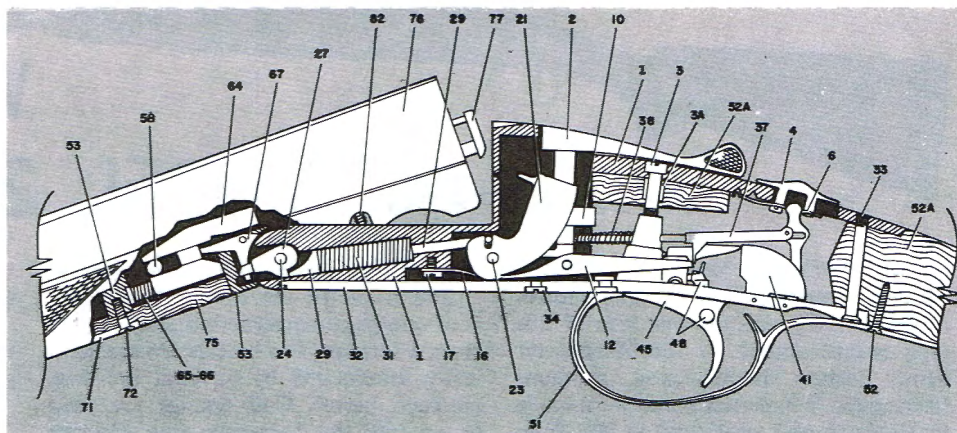




discontinued in 1959. It has been available since January 1960 on a custom basis only. It is now made in 12-, 16-, and 20-ga. only, but was formerly also available in 28-ga. The custom-built gun now offered can be obtained in 3 basic grades, which are designated Custom Grade, Pigeon Grade, and Grand American Grade.

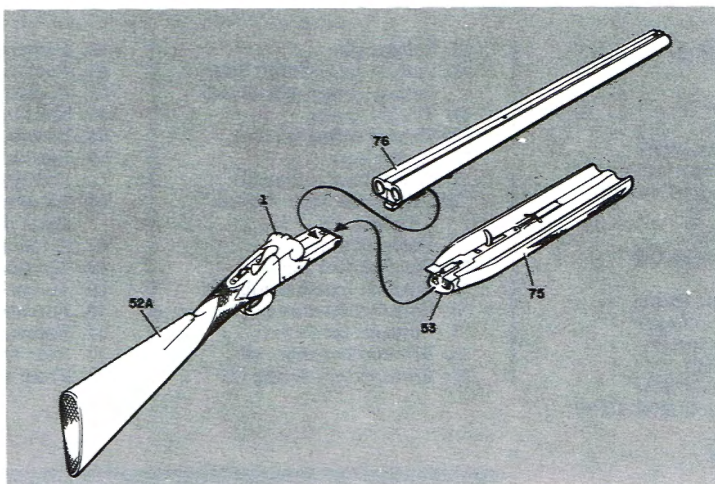
Prior to January 1960, the Model 21 was offered in a variety of standard styles covering every conceivable taste and style of shooting. Custom-built guns were also offered, but even the standard style guns were furnished with special dimension stocks (within certain limits) at no extra charge.

Manufacture of the Model 21 with plain extractors was discontinued in 1941. Manufacture of the double trigger version was discontinued in 1944. After Jan. 1, 1950, the Model 21 was produced in single trigger, selective ejection style only.



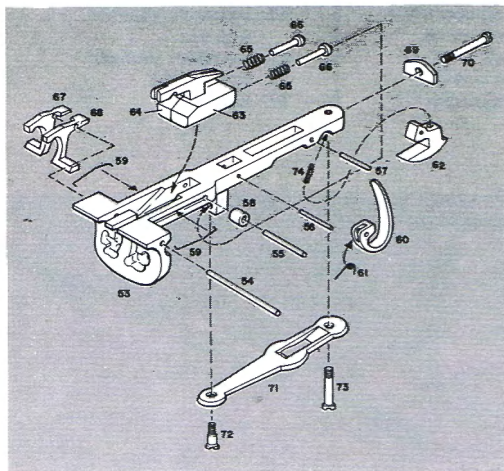
1

Section. The section drawing shows relationship of all parts



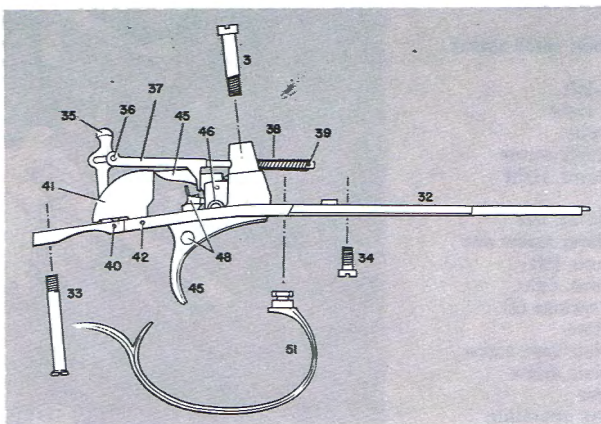
2

Major components. The major components of the arm after basic takedown are shown here. For everyday, normal cleaning, disassembly beyond this point should seldom, if ever, become necessary



3

Forearm assembly. Remove rear and front forearm screws (72, 73) from forearm catch plate (71) on underside of forearm (75). Remove forearm recoil screw (70) and abutment (69). Forearm shoe (53) may be separated from forearm. Further disassembly of shoe is not recommended and seldom necessary

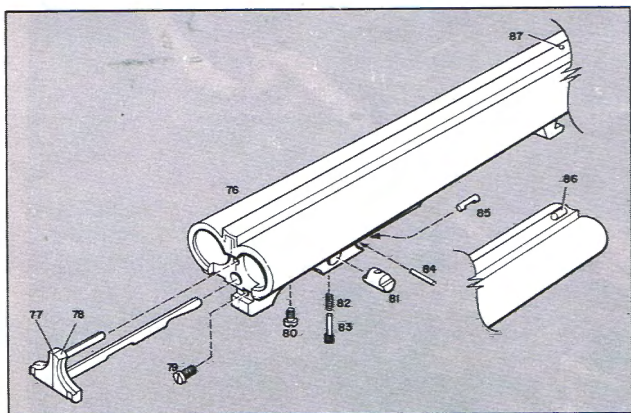


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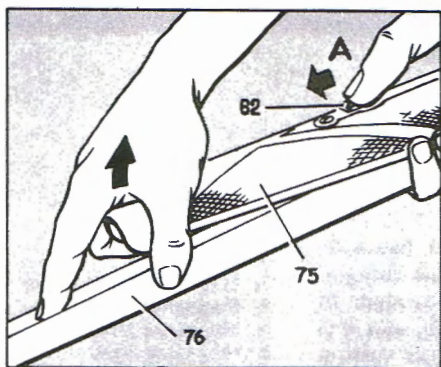
Trigger assembly. The assembled trigger mechanism contained in the trigger plate (32) is shown here to illustrate proper relationship of parts. Trigger mechanism should be disassembled only by a competent gunsmith when necessary for replacement or repair of parts. Take care when reassembling trigger plate and trigger mechanism to underside of frame that locking bolt catch spring plunger (20) is properly seated in its hole in top side of trigger plate

5

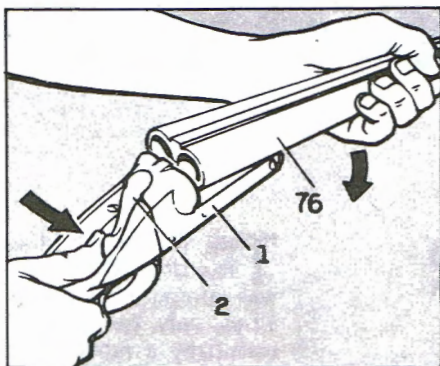
Barrel assembly. With barrel separated from frame (1) and wood forearm (75), remove extractor stop screw (80) and locking bolt stop screw (79) from barrel lug. Remove barrel stop screw (83) and spring (82). Remove left and right extractors (77, 78) and barrel stop (81). Drift out extractor plunger stop pin (84) and remove extractor plunger (85) from front end of barrel lug



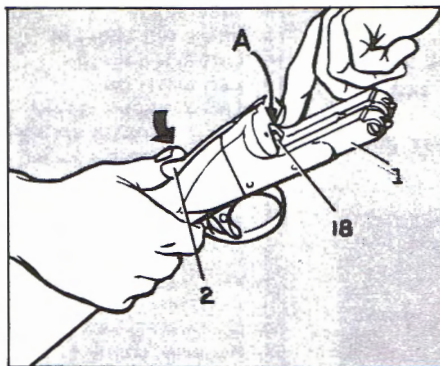




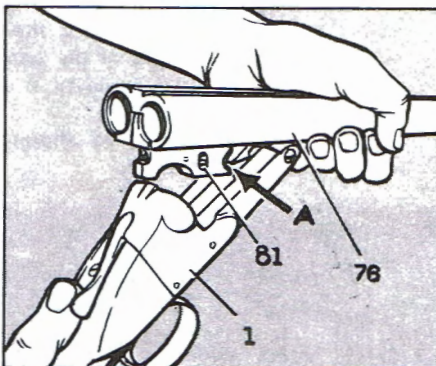
**6** To take down the assembled arm, hold gun inverted and push forearm catch (62) forward as shown at "A" while lifting up on front end of forearm (75). Separate forearm from barrels (76)



**7** Push top-lever (2) over to right swinging breech end of barrels upward. Lift barrels (76) up and off frame (1)



**8** With barrels off, push top-lever (2) to right and press down on locking bolt catch (18) as shown at "A" in order to release locking bolt. Then release top-lever



**9** In reassembling barrels (76) to frame (1), push top-lever (2) to right until it catches. Hold gun as shown. Notch in front of barrel lug at "A" must engage joint pin (26) in frame. Note that barrel stop (81) must be in seat in floor of frame before breech can be closed. Swing barrels up and lock. Place forearm against barrels with rear end of shoe (53) engaging cocking levers (25, 27) at front of frame. Press front end of forearm against barrels until forearm assembly locks into place, completing reassembly

## DISASSEMBLY PROCEDURE

Basic takedown is shown in Figs. 6, 7, 8, and 9. With the arm dismantled into its major components as shown in Fig. 2, disassembly of the action and frame assembly may be accomplished.

Remove guard bow screws (52) from underside of guard bow (51). Lift rear end of guard bow free of stock and turn guard bow 90°, withdrawing it from bottom of trigger plate (32). Remove upper tang screw (3), trigger plate tang screw (33), and trigger plate screw (34). Rap frame sharply with a wooden or plastic hammer to loosen trigger plate and remove it from bottom of frame (1). Disassembly of trigger mechanism contained in trigger plate is not recommended. (See Fig. 4.)

With trigger plate removed, buttstock (52A) may be drawn away from frame to rear. Remove sear spring screws (17) and right and left sear springs (15, 16)

from underside of frame and withdraw locking bolt catch spring (19) and plunger (20), from locking bolt catch (18). Trip sears so hammers are in fired position and drift out sear pin (14).

Remove left and right sears (12, 13). Remove locking bolt lever screw (11) and pull top-lever (2) out top of frame. Remove locking bolt catch (18) and remove locking bolt lever (10), taking care to prevent forcible ejection of top-lever plunger (7) and spring (8). Remove cocking lever screw (24) and nut (28), dropping right and left cocking levers (25, 27) out front of frame.

Hammer springs are difficult to remove and disassembly of hammers (21, 22), hammer springs (31) and left and right cocking rods (29, 30) should only be undertaken by a competent gunsmith. Reassemble in reverse.

## A MAN TO REMEMBER

JOHN M. BROWNING

"Wizard of Modern Firearms"

Born—Ogden, Utah  
Jan. 21, 1855

Died—Belgium  
Nov. 26, 1926



**J**OHN BROWNING invented and designed more successful firearms than any other American before or since. The son of a gunsmith, he built his first gun from scrap iron in his father's shop at the age of 13. In 1879 he obtained his first patent for a breech-loading single-shot rifle which he sold to Winchester. Thereafter in rapid succession he designed many other firearms, including auto-loading shotguns and autoloading rifles, repeating shotguns, repeating rifles, single-shot rifles, and autoloading pistols. Products of his inventiveness were, and still are, manufactured by leading armsmakers in the U. S. and Europe.

In 1890 Browning turned seriously to the automatic arms which brought him his greatest renown. In that year his machine gun, manufactured by Colt, was adopted by the United States Army. In 1891 he produced an automatic pistol which was also manufactured by Colt, and in 1911 the .45 Cal. version was adopted by the Army.

When the Secretary of War ordered a test of machine guns in 1917, Browning was ready and submitted two guns through the Colt Company, a heavy water-cooled machine gun and the light Browning automatic rifle. Both of these guns were far superior to any others tested and they became basic military arms.

Browning's genius was recognized throughout the world, and his designs were widely sought after. Outside the United States his principal activities were in Belgium where his arms were adopted for the military forces. There he was made a Chevalier of the Order of Leopold and decorated by King Albert on the occasion of the completion of the millionth automatic pistol manufactured at the Fabrique Nationale in Liege.—HAROLD L. PETERSON.





# WINCHESTER MODEL 25 SHOTGUN

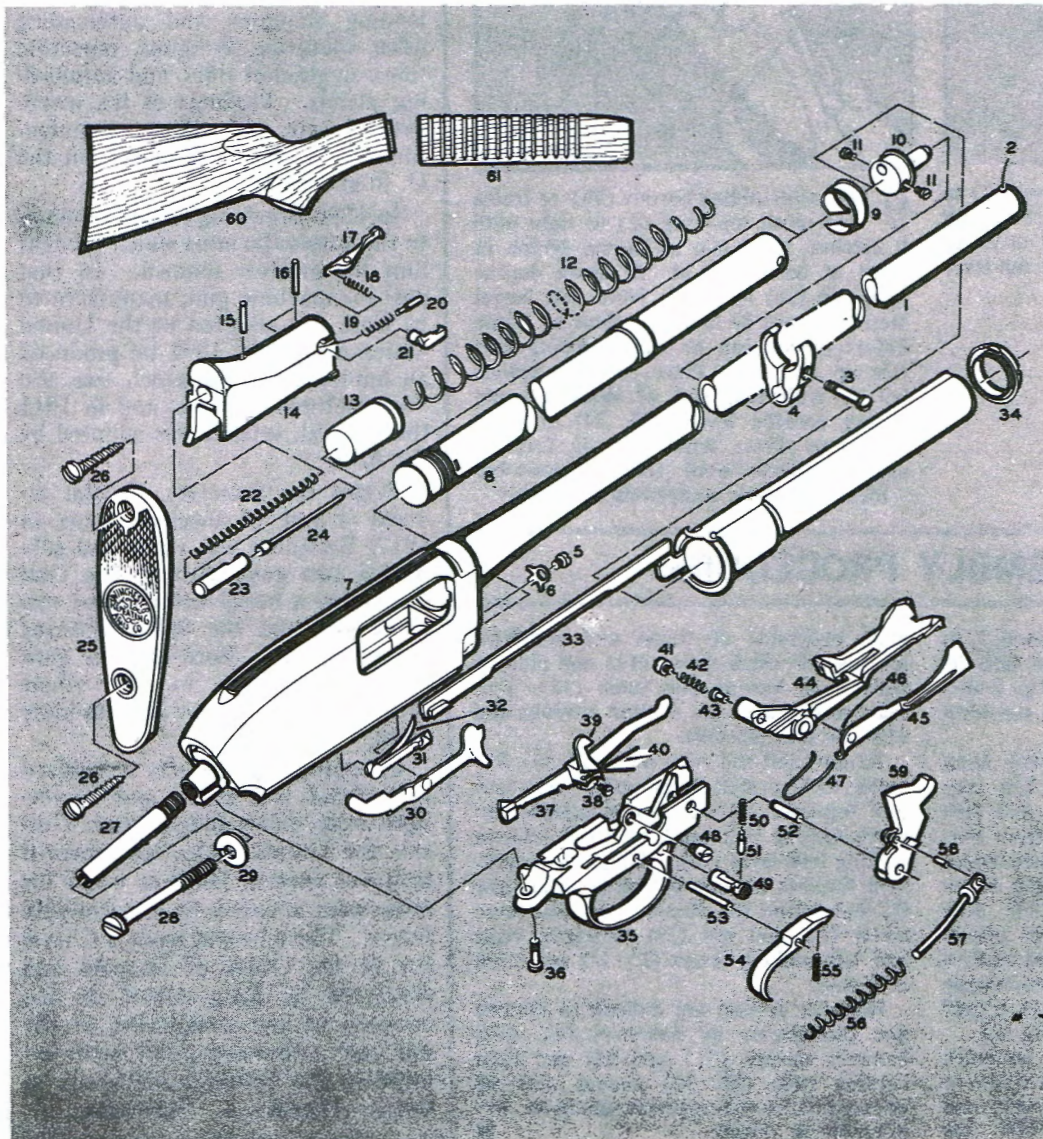
By THOMAS E. WESSEL

THE Winchester Model 25 hammerless slide-action solid-frame shotgun was introduced in 1950. It was made in 12-ga. only, for the 2¾" shell, and was essentially a moderately priced version of the Winchester Model 12 takedown shotgun. The Model 25 was offered in either 26" or 28" barrel lengths with an option of full or modified choke in the 28" length, or improved cylinder boring in the 26" length. Magazine capacity is 4 shells and a wood plug was furnished to reduce the capacity to 2 shells. Weight of the gun with 28" barrel is approximately 8 lbs. and overall length is 47¼".

The Model 25 shotgun was discontinued in 1957.

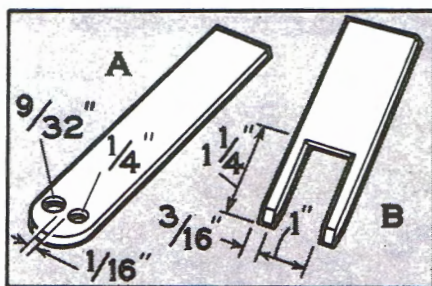
## Parts Legend

1. Barrel\*
2. Front sight \*
3. Magazine band screw
4. Magazine band
5. Magazine lock screw
6. Magazine lock
7. Receiver
8. Magazine
9. Action slide spring
10. Magazine plug
11. Magazine plug screw (2)
12. Magazine spring
13. Magazine follower
14. Breechbolt
15. Firing pin stop pin
16. Left extractor pin
17. Left extractor
18. Left extractor spring
19. Right extractor spring
20. Right extractor spring plunger
21. Right extractor
22. Firing pin spring
23. Firing pin striker
24. Firing pin
25. Buttplate
26. Buttplate screw (2)
27. Receiver shank \*
28. Buttstock bolt
29. Buttstock bolt washer
30. Cartridge cutoff
31. Ejector
32. Ejector spring
33. Action slide
34. Action slide sleeve screw cap
35. Guard
36. Guard screw
37. Action slide lock \*
38. Action slide lock screw \*
39. Action slide lock pivot \*
40. Action slide lock spring \*
41. Carrier plunger screw
42. Carrier plunger spring
43. Carrier plunger
44. Carrier
45. Cartridge guide
46. Cartridge guide pivot \*
47. Carrier spring
48. Carrier pivot
49. Trigger lock
50. Trigger lock plunger spring
51. Trigger lock plunger
52. Hammer pin
53. Trigger pin
54. Trigger
55. Trigger spring
56. Hammer spring
57. Hammer spring guide rod
58. Hammer spring guide pin
59. Hammer
60. Buttstock
61. Action slide handle



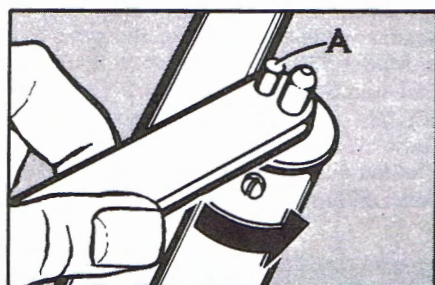
\* Factory assembly to other major part. Do not disassemble.





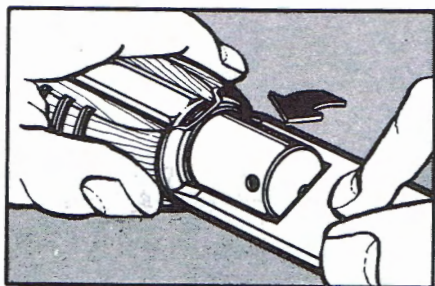
**1** To properly disassemble Model 25 it is necessary to fabricate 2 special tools. Make Tool A from 6" or 8" bar of  $\frac{3}{4} \times \frac{3}{16}$ " cold-rolled steel stock. Drill and shape end as shown. Holes should be slightly chamfered and all edges deburred.

Make Tool B from an 8" length of tempered steel dimensioned as shown. An old power hacksaw blade is excellent. Grind or file double end to form screwdrivers



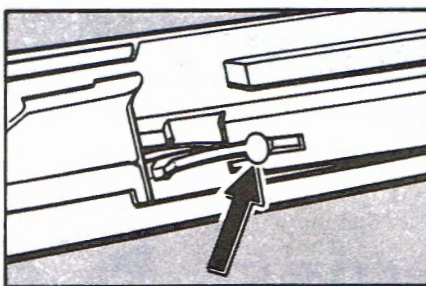
**2** Remove magazine band screw (3) and slide magazine band (4) forward on barrel (1). Remove magazine lock screw (5) and magazine lock (6) in face of receiver (7). Apply Tool A to lug in front of magazine plug (10) aligning  $\frac{1}{4}$ " hole in tool with hole in plug. Insert short piece of  $\frac{1}{4}$ " drill rod (A) and turn out magazine (8) approximately 150°.

Tool is necessary to 'break' tight screw fit of magazine to receiver. Unscrew magazine, with action slide handle (61) attached, from receiver by hand. Pull entire assembly straight forward and free of gun



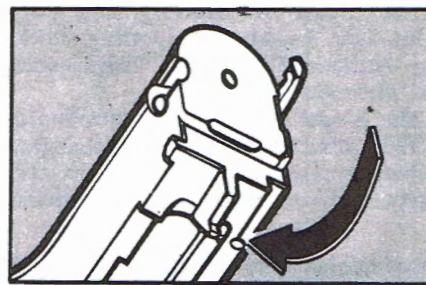
**3** Unscrew magazine plug screws (11), holding magazine plug in place with thumb. Slowly remove magazine plug and grasp magazine spring (12) to prevent its escape. Remove spring and follower (13).

Apply Tool B to action slide sleeve screw cap (34) as shown and unscrew it. Pull off action slide handle and withdraw magazine from action slide (33). Remove action slide spring (9). When reassembling, be sure this spring is on rear side of stop collar on magazine

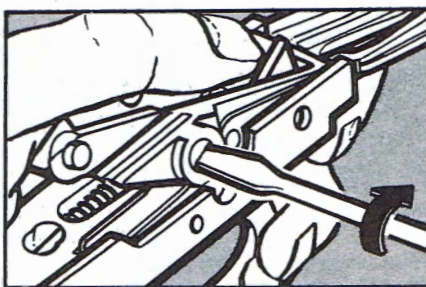


**4** Remove guard screw (36) and swing guard (35) down out of receiver (inside left wall of receiver shown). Lift out cartridge cutoff (30). With small screwdriver, pry out ejector (31—arrow) at rear of breechbolt (14) in receiver. Slide breechbolt fully rearward and lift out.

Remove buttplate screws (26), buttplate (25), buttstock bolt (28), and washer (29). Pull off buttstock (60). In reassembly, replace buttstock after replacing guard



**5** Push back right extractor plunger (20) with small screwdriver and lift out right extractor (21) together with plunger and spring (19). Drift out left extractor pin (16, arrow) from bottom of breechbolt and lift away left extractor (17) and spring (18). Drift out firing pin stop pin (15) and remove firing pin striker (23), firing pin (24), and firing pin spring (22). Reassemble bolt in reverse



**6** Unscrew carrier pivot (48). This has a left thread and unscrews right. Remove carrier (44) and carrier spring (47), with cartridge guide (45) attached. Let hammer (59) down slowly and drift out hammer pin (52) from the left. Remove hammer with hammer spring (56) and hammer spring guide rod (57).

Drift out trigger pin (53) and remove trigger (54) and trigger spring (55). Do not disassemble action slide lock (37) assembly from guard as lock screw (38) is 'staked' to lock pivot (39).

To remove trigger lock (49) insert small pin into hole in lock, turn  $\frac{1}{4}$  turn and at same time push trigger lock out from left to right. Reassemble in reverse

## A MAN TO REMEMBER

The Rev. Alexander John Forsyth

Father of  
percussion ignition

Born—Dec. 28, 1768

Died—June 11, 1843



BORN in Belhelvie Parish, Aberdeenshire, Scotland, the son of a minister, Alexander Forsyth also studied for the ministry and eventually succeeded his father at Belhelvie when the elder Forsyth died in 1790. Yet whenever the duties of his parish permitted, Alexander Forsyth devoted himself to the 3 enthusiasms he had had since boyhood: chemistry, mechanics, and shooting. It was the fortunate combination of these 3 interests that led Forsyth to the development of the first percussion lock in 1805. He adapted the new lock to his own fowling piece and shot with it throughout the season of that year before taking it to London to show to ordnance officers.

For the next few years, Forsyth spent most of his time perfecting his new system. Lord Moira, Master General of Ordnance, persuaded him to establish a laboratory at the Tower of London, where he experimented on locks and engaged in the extremely hazardous business of compounding and testing different fulminates. In 1807 a new Master General ordered Forsyth out of the Tower, so the persevering Scotsman continued his work at home and finally obtained a patent that year.

Forsyth's invention was one of the most revolutionary in the history of firearms. He did not develop the percussion cap. He used a loose powder compound (fulminate of mercury) instead. However, the percussion cap, pellets, and concussion primers of all sorts that have been developed since stem directly from his work.

It was almost 30 years before the British government recognized Forsyth's work—in 1836, the first percussion muskets were issued to British troops.

In 1842, a grant of £200 was made to Dr. Forsyth "for remuneration as the original inventor of percussion firearms". Four months after his death, the Board of Ordnance reconsidered and distributed £1000 among the childless inventor's heirs.—HAROLD L. PETERSON





By James M. Triggs

# WINCHESTER MODEL 52C RIFLE

**D**URING the 1919 National Matches at Caldwell, N. J., Winchester Repeating Arms Co. introduced prototypes of a new cal. .22 bolt-action smallbore target rifle which bore the factory code number G52R. Winchester employee Thomas C. Johnson had been issued patents on both the rifle and the curved 5-shot box-magazine to which it was adapted. Designated Model 52, first commercial production was in 1920. In 1924 an improved model was introduced which incorporated a better stock design, but with no changes in action or barrel. The Model 52 was first made with heavy barrel in 1927.

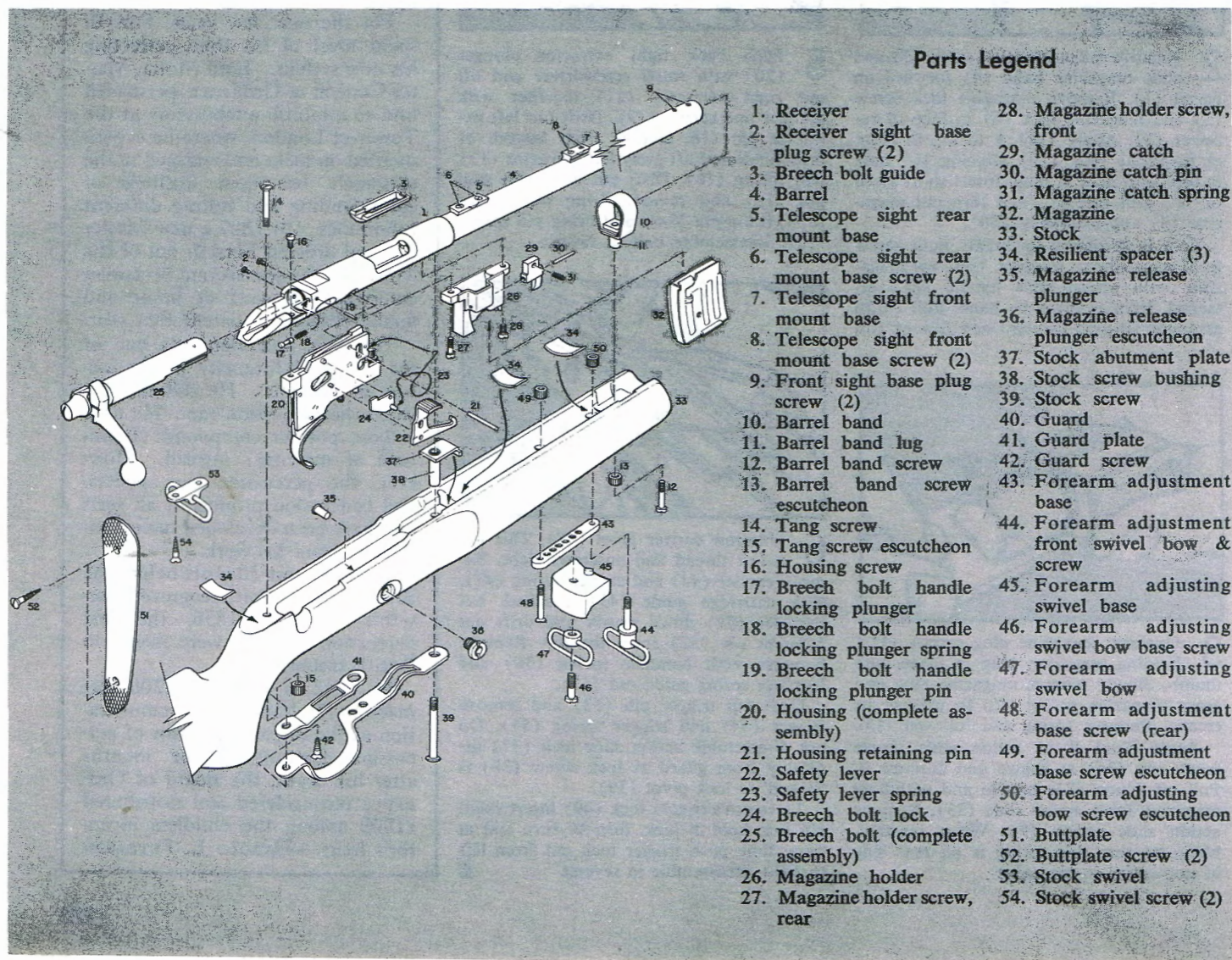
In 1929, a much-improved version was offered featuring speed-lock ignition, improved sights, and improved stock with semi-beavertail fore-end. Shortly thereafter parts kits were made available to modernize the original 'slow-lock' action to the newer speed-lock type.

The Model 52 Sporting rifle with lightweight barrel and sporting stock was authorized in 1934. This model was discontinued in 1959.

The Model 52B rifle was introduced in 1937. It incorporated several changes, including re-designed trigger, pivoted safety lock on right side of receiver

forward of bolt handle, and new speed-lock mechanism. Stock for the standard-barrel model was re-designed, and the heavy-barrel model was furnished with the new style Marksman stock.

In 1951 the Model 52B was superseded by the Model 52C with new Micro-Motion trigger, improved Marksman stock, and improved barrel band. General specifications were the same as the Model 52B. As a matter of interest, serial numbers of the Model 52C began with gun #75,550. Production of the Model 52C was discontinued in 1961 at which time it was replaced with the Model 52D.



## Parts Legend

1. Receiver
2. Receiver sight base plug screw (2)
3. Breech bolt guide
4. Barrel
5. Telescope sight rear mount base
6. Telescope sight rear mount base screw (2)
7. Telescope sight front mount base
8. Telescope sight front mount base screw (2)
9. Front sight base plug screw (2)
10. Barrel band
11. Barrel band lug
12. Barrel band screw
13. Barrel band screw escutcheon
14. Tang screw
15. Tang screw escutcheon
16. Housing screw
17. Breech bolt handle locking plunger
18. Breech bolt handle locking plunger spring
19. Breech bolt handle locking plunger pin
20. Housing (complete assembly)
21. Housing retaining pin
22. Safety lever
23. Safety lever spring
24. Breech bolt lock
25. Breech bolt (complete assembly)
26. Magazine holder
27. Magazine holder screw, rear
28. Magazine holder screw, front
29. Magazine catch
30. Magazine catch pin
31. Magazine catch spring
32. Magazine
33. Stock
34. Resilient spacer (3)
35. Magazine release plunger
36. Magazine release plunger escutcheon
37. Stock abutment plate
38. Stock screw bushing
39. Stock screw
40. Guard
41. Guard plate
42. Guard screw
43. Forearm adjustment base
44. Forearm adjustment front swivel bow & screw
45. Forearm adjusting swivel base
46. Forearm adjusting swivel bow base screw
47. Forearm adjusting swivel bow
48. Forearm adjustment base screw (rear)
49. Forearm adjustment base screw escutcheon
50. Forearm adjusting bow screw escutcheon
51. Buttplate
52. Buttplate screw (2)
53. Stock swivel
54. Stock swivel screw (2)



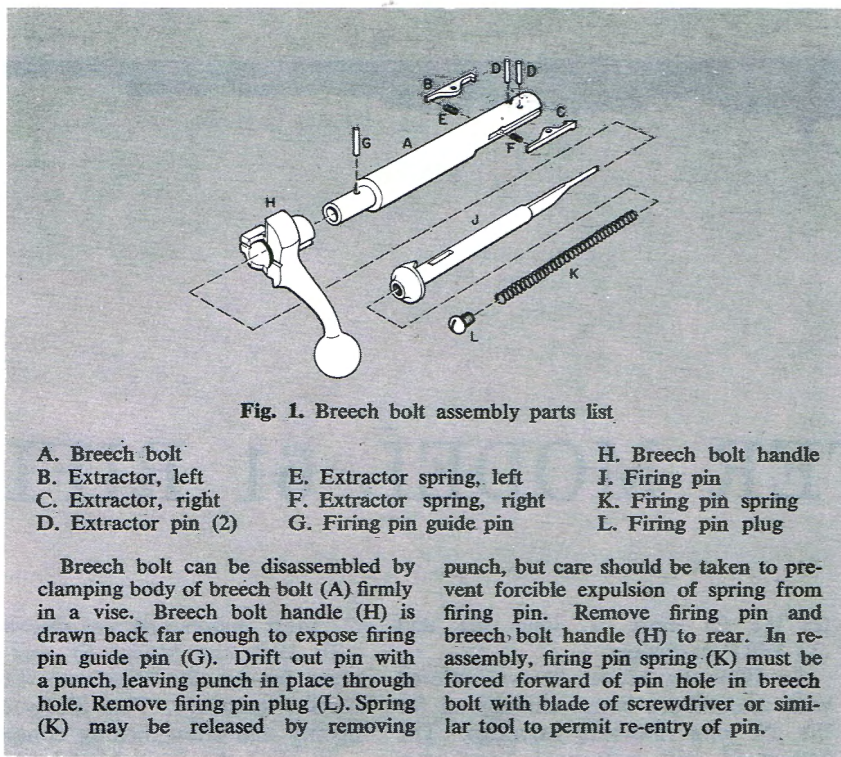


Fig. 1. Breech bolt assembly parts list

- |                      |                            |                       |
|----------------------|----------------------------|-----------------------|
| A. Breech bolt       | E. Extractor spring, left  | H. Breech bolt handle |
| B. Extractor, left   | F. Extractor spring, right | J. Firing pin         |
| C. Extractor, right  | G. Firing pin guide pin    | K. Firing pin spring  |
| D. Extractor pin (2) |                            | L. Firing pin plug    |

Breech bolt can be disassembled by clamping body of breech bolt (A) firmly in a vise. Breech bolt handle (H) is drawn back far enough to expose firing pin guide pin (G). Drift out pin with a punch, leaving punch in place through hole. Remove firing pin plug (L). Spring (K) may be released by removing

punch, but care should be taken to prevent forcible expulsion of spring from firing pin. Remove firing pin and breech bolt handle (H) to rear. In reassembly, firing pin spring (K) must be forced forward of pin hole in breech bolt with blade of screwdriver or similar tool to permit re-entry of pin.

### Disassembly Procedure

To remove bolt, check to be sure chamber is empty, then close bolt and pull trigger. Push forward on trigger and draw bolt rearward out of receiver. When withdrawing bolt, lift rear of bolt up slightly to clear comb of stock.

To reassemble bolt to receiver, slide bolt into receiver with flat side down. Align lug on underside of bolt handle with slot in receiver. While holding trigger back, push bolt all the way forward into receiver.

To disassemble barrel and receiver from stock, remove barrel band screw (12), tang screw (14), and stock screw (39). Lift bar-

rel and receiver up out of stock (33).

Magazine holder (26) is removed by unscrewing magazine holder screws (27 & 28). Remove breech bolt guide (3) from top of receiver. To remove complete trigger housing assembly (20), unscrew housing screw (16) from top of receiver and drift out housing retaining pin (21). Drop housing down out of bottom of receiver. Safety lever spring (23) is easily removed from housing by lifting its front end out of slot at front edge of housing. Safety lever (22) and breech bolt lock (24) can be lifted up off pins in housing. Reassemble in reverse order.

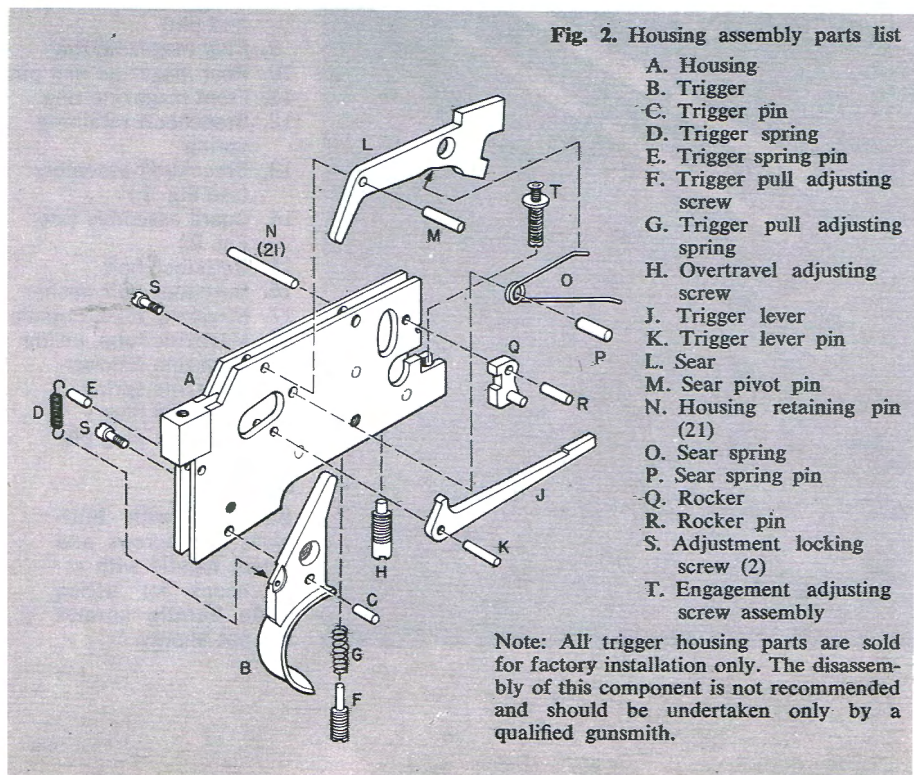


Fig. 2. Housing assembly parts list

- |  |
|--|
| A. Housing                             |
| B. Trigger                             |
| C. Trigger pin                         |
| D. Trigger spring                      |
| E. Trigger spring pin                  |
| F. Trigger pull adjusting screw        |
| G. Trigger pull adjusting spring       |
| H. Overtravel adjusting screw          |
| J. Trigger lever                       |
| K. Trigger lever pin                   |
| L. Sear                                |
| M. Sear pivot pin                      |
| N. Housing retaining pin (21)          |
| O. Sear spring                         |
| P. Sear spring pin                     |
| Q. Rocker                              |
| R. Rocker pin                          |
| S. Adjustment locking screw (2)        |
| T. Engagement adjusting screw assembly |

Note: All trigger housing parts are sold for factory installation only. The disassembly of this component is not recommended and should be undertaken only by a qualified gunsmith.

## A MAN TO REMEMBER

JAMES HENRY BURTON

*He perfected the Minie ball*

Born—Shenondale Springs, Va.,  
Aug. 17, 1823

Died—Winchester, Va., Oct. 18, 1894

JAMES BURTON devoted almost all of his active life to the supervision of armories. In this he was an expert. Educated at the Westchester Academy in Pennsylvania, he gave up formal schooling at the age of 16 and entered a Baltimore machine shop to learn the trade. His studies there lasted 4 years, and then he moved to Harpers Ferry where he obtained a job in the rifle works. His rise was rapid. The next year, 1845, he was appointed foreman, then Assistant Master Armorer, and finally Master Armorer, all within 10 years.

It was while he was Assistant Master Armorer in 1849 that Burton perfected the Minie ball. As originally designed by Capt. C. E. Minie, the bullet had an iron cup in a cavity in its base which was driven forward by the force of the explosion to expand the projectile so that it would take the rifling. Burton found that if the base cavity were properly designed, no plug was needed. This made the Minie ball both easier and cheaper to manufacture, and as modified by Burton it was adopted by the United States.

Burton's career at Harpers Ferry lasted only 10 years. In 1855 he accepted appointment as Chief Engineer of the Royal Small Arms Factory at Enfield, England, returning to America in 1860 because of ill health. During the Civil War he became a lieutenant colonel in the Confederate Ordnance Dept. where he supervised armory production and was sent to Europe on a mission for the Confederate State Dept. In 1871 he accepted a position in England for a firm making machinery for a new small arms plant for the Russian government. He planned to go to Russia to assume technical direction of the factory when completed, but poor health forced him to return to Virginia in 1873. He became a farmer near Winchester, and spent his remaining years in that occupation.

—HAROLD L. PETERSON





# WINCHESTER MODEL 61 RIFLE

By JAMES M. TRIGGS

**T**HE Winchester Model 61 cal. .22 slide-action rifle was introduced in 1932. Of hammerless, tubular magazine construction, it was offered initially in both round and octagonal barrel styles. The basic model with 24" round barrel was chambered for the .22 short, long, and long rifle cartridges. The 24" octagonal barrel was chambered

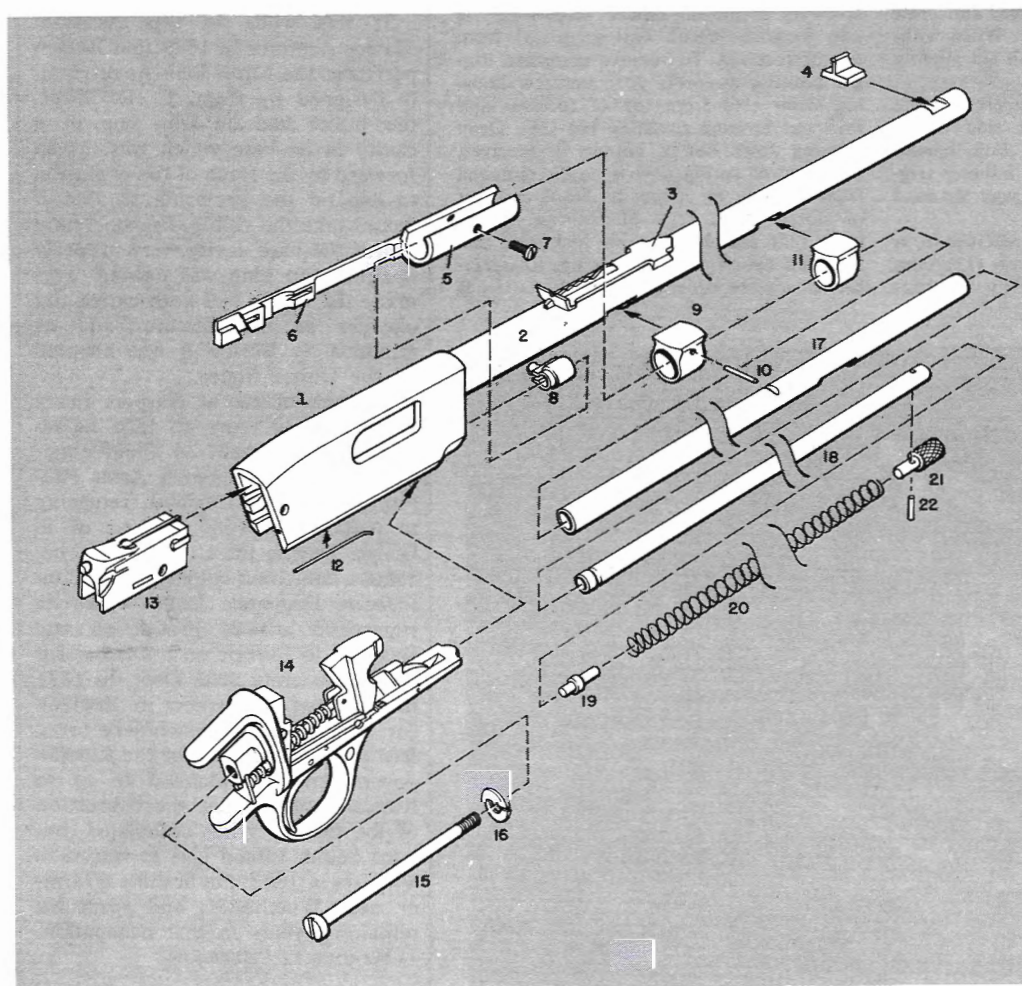
for the .22 short, .22 long rifle, and .22 WRF cartridges.

In 1939 the Model 61 was offered with smoothbore barrel chambered for the .22 long rifle shot cartridge. The Model 61 with octagonal barrel was discontinued after World War II and the .22 WRF chambering was then offered in 24" round barrel style. The

.22 short chambering was discontinued.

In 1960 the Model 61 was chambered for the .22 Winchester Magnum Rimfire cartridge. This involved redesigning and strengthening components.

In 1963 the basic Model 61 in cal. .22 short, long, and long rifle was discontinued on introduction of the Winchester Model 270 slide-action rifle.



## Parts Legend

1. Receiver
2. Barrel
3. Rear sight and elevator
4. Front sight
5. Action slide sleeve
6. Action slide bar (shown assembled to sleeve)
7. Action slide handle screws (2)
8. Cartridge cutoff assembly (comprised of cartridge cutoff retainer and pin)
9. Rear magazine ring
10. Rear magazine ring pin
11. Front magazine ring
12. Breechbolt retaining spring
13. Breechbolt assembly (see Fig. 1.)
14. Guard assembly (see Fig. 2.)
15. Buttstock bolt
16. Buttstock bolt washer
17. Magazine tube, outside
18. Magazine tube, inside
19. Magazine follower
20. Magazine spring
21. Magazine plug
22. Magazine plug pin

## Note:

Buttstock with buttplate and screws and action handle with escutcheons for action slide handle screws are not shown.



## Disassembly Procedure

Check action to be sure rifle is unloaded. Loosen takedown screw at left rear of receiver and pull takedown screw (2A, Fig. 2.) out as far as it will go. Pull buttstock and guard (14) to rear away from receiver (1).

To remove breechbolt assembly (13) from receiver, hold receiver inverted and slide breechbolt to rear. With a small screwdriver or other suitable tool, pry breechbolt forward and upward gently so cam lug on breechbolt comes out of inclined cam cut in side of action slide bar (6). Slide breechbolt backward out of receiver.

Turn inner magazine tube by knurled

magazine plug (21) until locking pin is free of notch in outer magazine tube (17) and withdraw inner magazine tube (18) toward muzzle. To disassemble inner magazine tube, drift out magazine plug pin (22) and withdraw plug (21), spring (20), and follower (19). To remove outside magazine tube (17), drift out rear magazine ring pin (10) and draw tube toward muzzle and out of rings (9 & 11).

With receiver held inverted, grasp action slide handle and move action slide bar (6) all the way forward. Pull handle to right and roll it off barrel so action slide bar comes out of slot in receiver to right. Remove action slide handle screws (7) and pull wooden handle off sleeve (5). Remove

slide bar (6) from sleeve. Remove cartridge cutoff assembly (8) from slot at forward end of left side of receiver with fingers, or by drifting out gently.

Further disassembly of cartridge cutoff assembly is not recommended nor is removal of breechbolt retaining spring (12). Remove magazine rings (9 & 11) from barrel (2) by turning rings counterclockwise out of dovetails in barrel. Use a piece of wood dowel to accomplish this.

Remove buttplate screws and buttplate (not shown in exploded drawing) and remove buttstock bolt (15) and washer (16) through hole in rear of buttstock. Pull buttstock off guard assembly to rear. Reassemble in reverse.

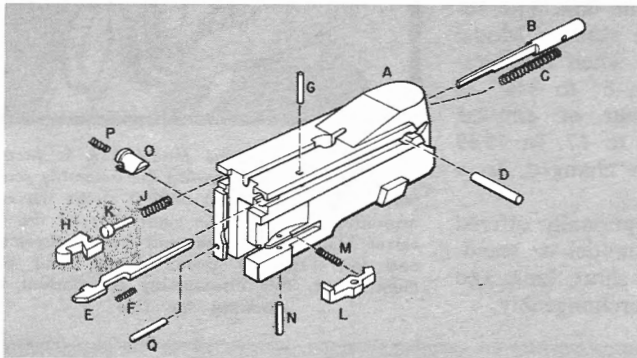
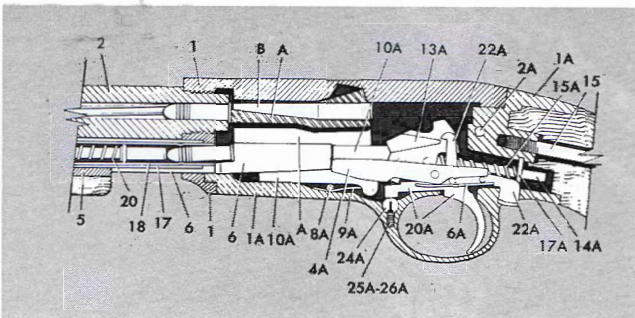


Fig. 1. Breechbolt Takedown

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| A. Breechbolt                   | J. Upper extractor spring         |
| B. Firing pin                   | K. Upper extractor spring plunger |
| C. Firing pin retracting spring | L. Lower extractor                |
| D. Firing pin stop pin          | M. Lower extractor spring         |
| E. Ejector                      | N. Lower extractor pin            |
| F. Ejector spring               | O. Carrier plunger                |
| G. Ejector pin                  | P. Carrier plunger spring         |
| H. Upper extractor              | Q. Carrier plunger pin            |

Drift out ejector pin (G) and withdraw ejector (E) and spring (F) from front of breechbolt (A). Drift out firing pin stop pin (D) and remove firing pin (B) and spring (C) from rear end of breechbolt. To remove upper extractor, place a thin screwdriver between extractor (H) and spring plunger (K), pulling plunger back with screwdriver.

Rock extractor upward and out of breechbolt. Remove plunger (K) and spring (J) from front of breechbolt. Drift out lower extractor pin (N) and remove lower extractor (L) and spring (M), taking care not to allow spring to escape forcibly. Drift out carrier plunger pin (Q) and remove carrier plunger (O) and spring (P) from right side of breechbolt. Reassemble in reverse order.



View of interior parts of the rifle in cocked position with cartridge in the chamber and one cartridge in magazine.

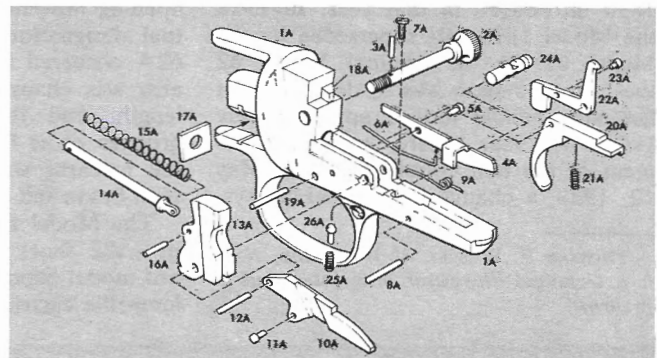


Fig. 2. Guard Takedown

- |                              |                                  |
|------------------------------|----------------------------------|
| 1A. Guard                    | 15A. Hammer spring               |
| 2A. Takedown screw           | 16A. Hammer spring guide rod pin |
| 3A. Takedown screw stop pin  | 17A. Hammer spring abutment      |
| 4A. Action slide lock        | 18A. Ejector stop                |
| 5A. Action slide lock pivot  | 19A. Trigger pin                 |
| 6A. Action slide lock spring | 20A. Trigger                     |
| 7A. Carrier stop screw       | 21A. Trigger spring              |
| 8A. Carrier spring pin       | 22A. Hammer catch                |
| 9A. Carrier spring           | 23A. Hammer catch stud           |
| 10A. Carrier                 | 24A. Trigger lock                |
| 11A. Carrier stop pin        | 25A. Trigger lock plunger spring |
| 12A. Hammer pin              | 26A. Trigger lock plunger        |
| 13A. Hammer                  |                                  |
| 14A. Hammer spring guide rod |                                  |

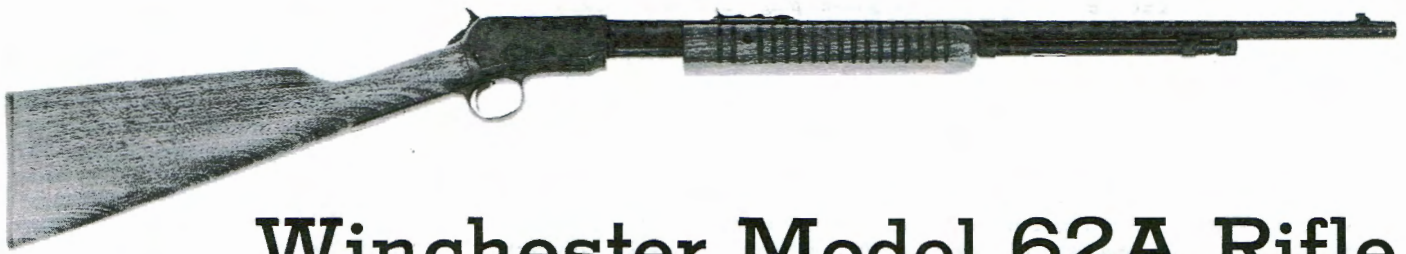
Drift out takedown screw stop pin (3A) and remove takedown screw (2A) from guard (1A). Drift out action slide lock pivot (5A) from right to left. Remove action slide lock spring (6A) from hole in lower edge of action slide lock (4A). Lift action slide lock upward and out of guard. Remove carrier stop screw (7A).

Drift out carrier spring pin (8A) and lift carrier upward to allow removal of carrier spring (9A). Drift out hammer pin (12A). Remove hammer (13A) with carrier (10A), and hammer spring (15A) and guide rod (14A) intact. These parts are now easily separated. Drift out hammer spring abutment (17A) from left to right. Drift out trigger pin (19A) and remove trigger (20A) and spring (21A) upward out of guard. Hammer catch (22A) may now be lifted out of guard.

Place trigger lock (24A) in "off" position. Place a small drift or other suitable tool in small hole in lock visible through top of guard and turn lock clockwise (viewed from right side of guard) by moving drift forward. This will disengage plunger (26A) from detent slot in lock.

Drift lock out of guard to left, remove plunger (26A) and spring (25A) from hole inside lock hole. Removal of ejector stop (18A) is accomplished by drifting out from rear of guard toward front. Reassemble in reverse.





# Winchester Model 62A Rifle

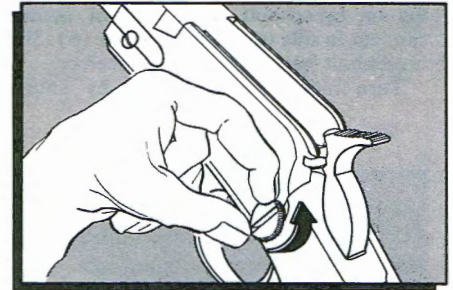
By Thomas E. Wessel

THE Winchester Model 62A cal. .22 tubular magazine rimfire rifle is a development of the Winchester Model 1890 introduced in that year. In 1932 the Model 1890 was superseded by the Model 62. In the original Model 62 the locking system was so designed that the slide handle moved approximately  $\frac{1}{4}$ " to the rear before opening movement of the bolt commenced. On May 12, 1938, a change in the locking sys-

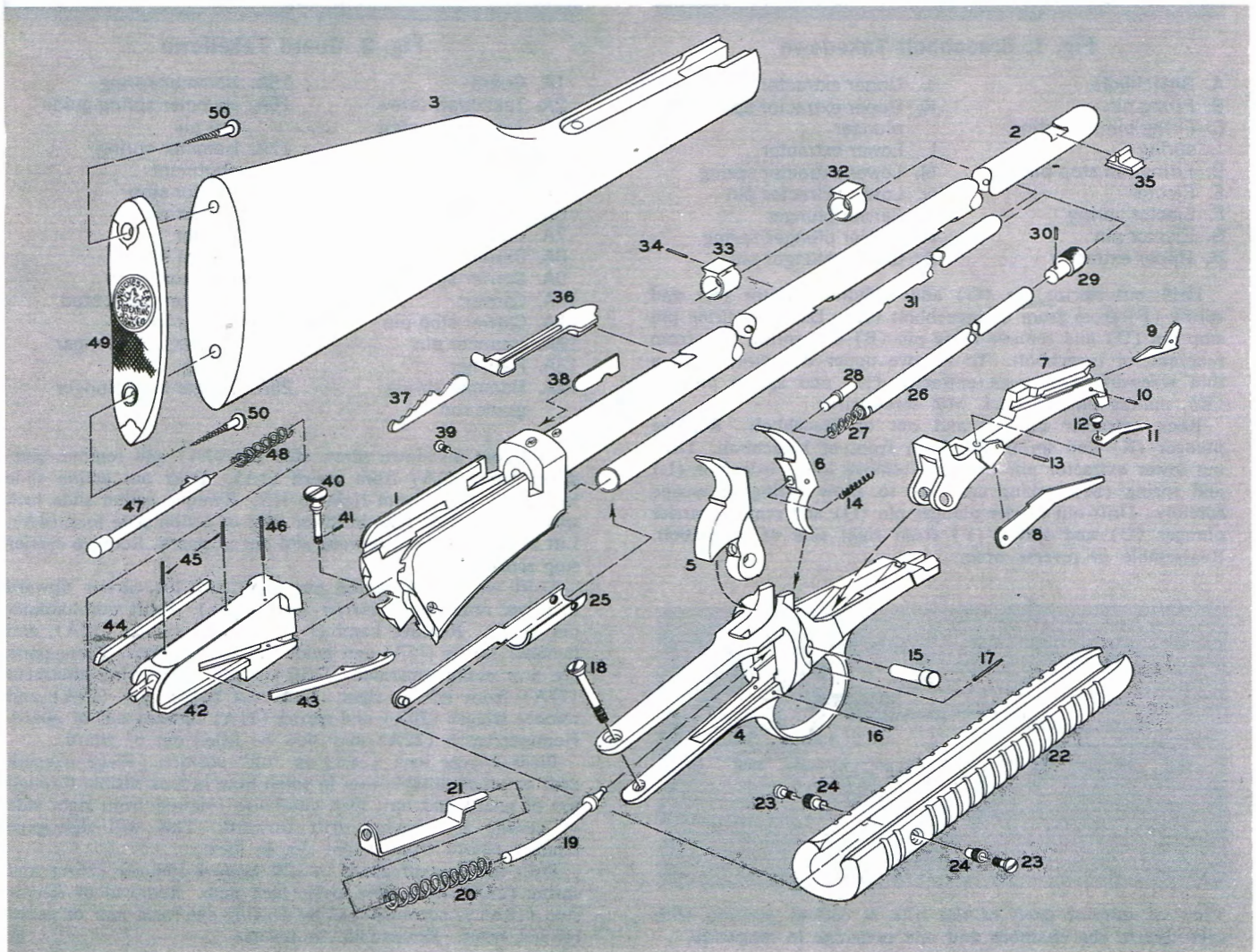
tem was authorized to that formerly used in the Model 1890 wherein initial movement of the slide handle starts opening movement of the bolt. The actual designation of the rifle as Model 62A occurred in 1939 when the forearm was changed from 6" to 8 $\frac{3}{8}$ " in length, and the number of circular grooves on it from 10 to 17. In 1949 the forearm was again changed, to a semi-beavertail type.

The Model 62A is optionally offered in a .22 short gallery model or standard model handling .22 short, long, and long-rifle cartridges interchangeably.

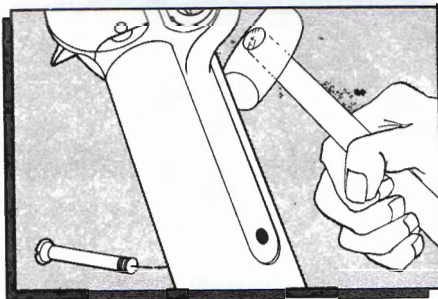
THOMAS E. WESSEL of Whippany, N.J., is a technical illustrator long interested in firearms.



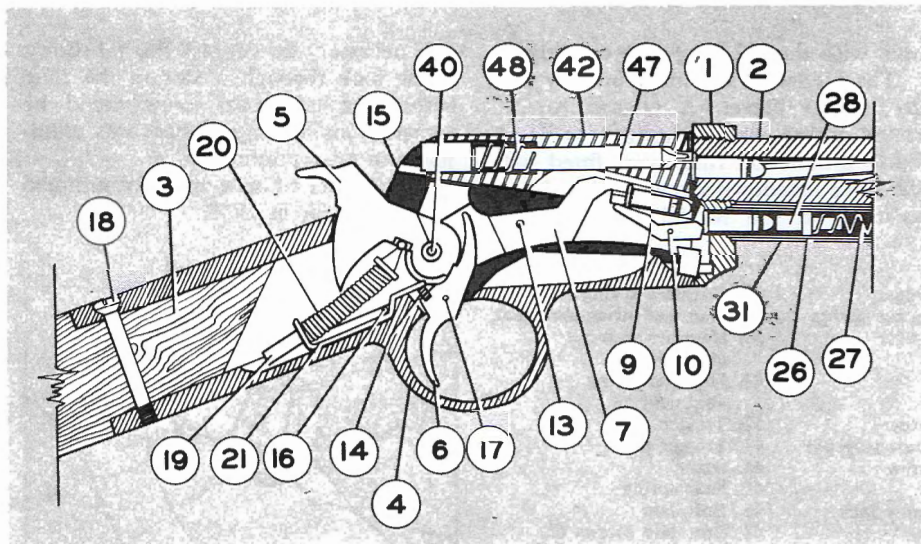
**1** Takedown of the Model 62A is accomplished by unscrewing the assembly screw (40) and pulling it out until it clears the corresponding hole on the right rear of the receiver (1). Grasp stock and action assembly and barrel-receiver group firmly, and pull them apart. This disassembly is sufficient for cleaning the rifle







**2** To remove or replace stock, unscrew upper tang screw (18) and remove it from rifle. Pull stock (3) away from guard (4). A light tapping at rear of trigger guard with a plastic hammer may be necessary because inletting of stock to guard is often very tight. Further disassembly of this rifle is not recommended, except by a competent gunsmith, due to the manner in which key parts are 'stake-pinned' in place, and special tools are needed



**3** This sectional drawing shows the Model 62A action closed and locked prior to firing. The cartridge in the carrier holds the cartridge stop (9) in "up" position retaining next round in magazine. After discharge, rear movement of the action slide handle (22) and action slide (25) cams breech bolt (42) from locking notches in either side of receiver (1). (Parts 22 and 25 not shown here.) Further rearward movement of the action slide draws back the breech bolt, ejects spent case, and cocks hammer (5). When slide handle is at rearmost position, carrier moves up, placing fresh cartridge in front of bolt which carries it into chamber. During this closing action the bolt also presses carrier downward, permitting another round to be moved into carrier, repeating the cycle. Action must be fully closed and locked before firing pin (47) can strike rim of cartridge

#### Parts Legend

- |  |                               |
|--|-------------------------------|
| 1. Receiver                            | 26. Magazine tube, inside     |
| 2. Barrel                              | 27. Magazine spring           |
| 3. Buttstock                           | 28. Magazine follower         |
| 4. Guard                               | 29. Magazine plug             |
| 5. Hammer                              | 30. Magazine plug pin         |
| 6. Trigger                             | 31. Magazine tube, outside    |
| 7. Carrier                             | 32. Magazine ring, front      |
| 8. Carrier lever                       | 33. Magazine ring, rear       |
| 9. Cartridge stop                      | 34. Magazine ring pin, rear   |
| 10. Cartridge stop pin                 | 35. Front sight               |
| 11. Carrier lever spring               | 36. Rear sight                |
| 12. Carrier lever spring screw         | 37. Elevator                  |
| 13. Carrier lever pin                  | 38. Slide cover               |
| 14. Trigger spring                     | 39. Slide cover stop screw    |
| 15. Assembling screw bushing           | 40. Assembling screw          |
| 16. Hammer spring abutment pin         | 41. Assembling screw stop pin |
| 17. Trigger pin                        | 42. Breech bolt               |
| 18. Upper tang screw                   | 43. Extractor                 |
| 19. Hammer spring abutment guide rod   | 44. Firing pin stop           |
| 20. Hammer spring                      | 45. Firing pin stop pin (2)   |
| 21. Hammer spring abutment             | 46. Extractor pin             |
| 22. Action slide handle                | 47. Firing pin                |
| 23. Action slide handle screw (2)      | 48. Firing pin spring         |
| 24. Action slide handle escutcheon (2) | 49. Buttplate                 |
| 25. Action slide                       | 50. Buttplate screw (2)       |

## A Man to Remember

R. S. LAWRENCE

Improved Sharps rifles  
and carbines

Born—Chester, Vt., Nov. 22, 1817

Died—Hartford, Conn., Mar. 10, 1892

**R**ICHARD SMITH LAWRENCE was a gunsmith almost all his life. When he was 2 years old his family moved to the Watertown area of New York State, and there Lawrence went to school and worked at various odd jobs. In 1837 he served 3 months in the Army during the Canadian Rebellion. In 1838 he moved to Windsor, Vt., and went to work for N. Kendall & Co., a firm making guns at the Windsor prison.

Once he started in the gunmaking business, Lawrence's fortunes rose rapidly. In 6 months he had so mastered the techniques that he was put in charge of the work, and continued in this capacity until the operation ceased in 1842. In 1843 he opened a gun shop in Windsor in partnership with Kendall, and a year later, with the help of S. E. Robbins, a businessman, they obtained a contract for 10,000 rifles from the federal government and formed the company of Robbins, Kendall & Lawrence. After 3 prosperous years, Robbins and Lawrence bought out Kendall.

By 1851 the firm had acquired such a reputation that they were engaged to furnish machinery for the Enfield Armory in England, and they also obtained a contract for British rifles and carbines. In 1852 they contracted for Sharps rifles and carbines and opened a new plant in Hartford. Production had hardly got underway, however, when the company failed because of an unsuccessful attempt to manufacture railroad cars and because of changes in the British contract. The Sharps Rifle Co. bought out Robbins and Lawrence but retained Lawrence as superintendent of production. He continued in this capacity until 1872 when he retired to take a position with the city of Hartford. He was still active in municipal affairs when he died in 1892.

In addition to his work as a gunsmith, Lawrence devised a number of important inventions and innovations. These included barrel-drilling and rifling machinery, the forerunner of the Lincoln milling machine, the split pulley, a breech-loading firearm, the use of tallow as a bullet lubricant, and, best known to gun collectors, the Lawrence pellet primer cut-off and rear sight used on Sharps arms and a flanged-plate gas check.—HAROLD L. PETERSON





By JAMES M. TRIGGS

# Winchester Model 63 Rifle

THE Winchester Model 63 semi-automatic rifle, in cal. .22 long rifle, was introduced in 1933. It was a revamped version of the Winchester Model 1903 rifle chambered for the .22 Winchester Automatic cartridge, a special inside-lubricated type which is not interchange-

able with the .22 long rifle cartridge.

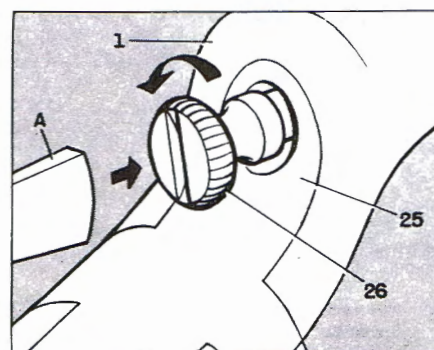
The Model 63 was made initially with 20" round barrel. A change to 23" round barrel was authorized in 1934. Early production rifles were fitted with the same takedown screw locking device as used on the Model 1903 rifle. It

was necessary to depress the takedown screw lock through a slot in the tang before the takedown screw could be turned. This locking feature was eliminated in later production.

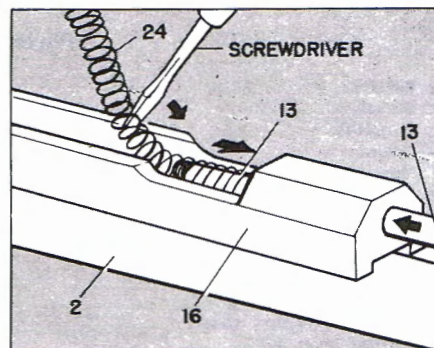
The Model 63 rifle was discontinued by Winchester in 1959.

## Parts Legend

- |                              |  |                                 |
|------------------------------|--|---------------------------------|
| 1. Receiver                  | 21. Extractor plunger                      | 38. Hammer spring               |
| 2. Barrel                    | 22. Extractor plunger spring               | 39. Hammer spring abutment      |
| 3. Rear sight                | 23. Extractor plunger stop screw           | 40. Hammer spring guide rod pin |
| 4. Front sight               | 24. Bolt spring                            | 41. Hammer spring abutment pin  |
| 5. Forearm tip tenon         | 25. Tang                                   | 42. Trigger                     |
| 6. Takedown screw bushing    | 26. Takedown screw                         | 43. Trigger pin                 |
| 7. Ejector                   | 27. Takedown screw stop pin                | 44. Sear                        |
| 8. Ejector screw             | 28. Takedown screw lock plunger            | 45. Sear spring                 |
| 9. Operating sleeve          | 29. Takedown screw lock plunger spring     | 46. Buttplate                   |
| 10. Operating sleeve tip pin | 30. Takedown screw lock plunger stop pin   | 47. Buttplate screws (2)        |
| 11. Operating sleeve tip     | 31. Trigger spring                         | 48. Buttstock nut               |
| 12. Operating sleeve spring  | 32. Trigger lock plunger                   | 49. Buttstock nut washer        |
| 13. Bolt guide rod           | 33. Trigger lock plunger spring            | 50. Magazine tube, outer        |
| 14. Forearm tip              | 34. Trigger lock                           | 51. Magazine tube, inner        |
| 15. Forearm tip screws (2)   | 35. Hammer                                 | 52. Magazine plug pin           |
| 16. Bolt                     | 36. Hammer pin                             | 53. Magazine spring             |
| 17. Firing pin               | 37. Hammer spring guide rod                | 54. Magazine follower           |
| 18. Firing pin spring        | 37A. Slave pin (for guide rod disassembly) | 55. Magazine plug               |
| 19. Firing pin stop pin      |  | 56. Cartridge cutoff            |
| 20. Extractor                |  | 57. Cartridge cutoff pin        |
|                              |  | 58. Cartridge cutoff spring     |
|                              |  | 59. Throat pin                  |



**1** To avoid damage, a specially shaped screwdriver should be used as shown at A to fit curved slot in head of takedown screw.



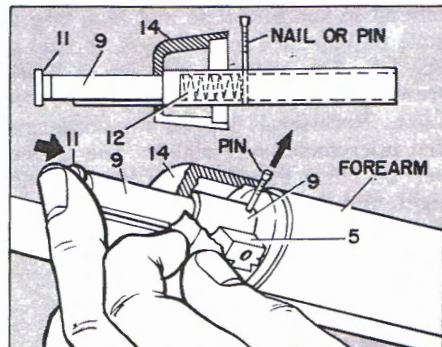
**2** To reassemble bolt spring and bolt guide rod to bolt, hold bolt assembly inverted and insert guide rod through front end of bolt, threaded end first. Start spring onto threaded end of guide rod. Slide spring onto rod a few coils at a time with blade of screwdriver as shown, while sliding guide rod back into bolt. When spring is on rod, slide rod back until threaded end engages threads in front end of receiver. Screw guide rod firmly in place.



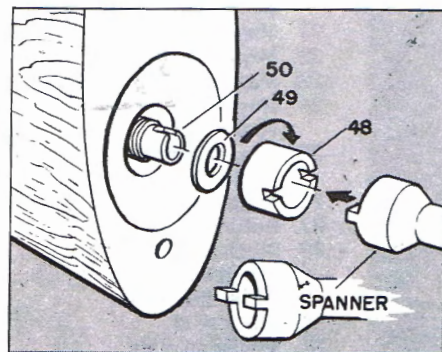
## Disassembly Procedure

To take down barrel and receiver group from tang and stock group, unscrew take-down screw (26) as shown in Fig. 1. Pull receiver (1) from tang (25) in a straight line. Remove both forearm tip screws (15) and forearm tip (14) containing operating sleeve (9) and spring (12) toward muzzle. Hold operating sleeve spring to avoid its forcible ejection during this operation. Operating sleeve tip (11) can be removed by drifting out pin (10). Forearm tip tenon (5) can be driven out of its dovetail in underside of barrel from left to right. Slide forearm forward off receiver.

To remove bolt guide rod (13) and bolt spring (24), hold receiver assembly in-



**3** Insert operating sleeve spring in open end of operating sleeve. Compress spring with a suitable rod or wood dowel until end of such rod can be seen through hole in operating sleeve. Insert a small pin or punch through hole in operating sleeve to hold spring compressed and remove dowel. Push operating sleeve assembly back inside forearm as shown (note that forearm tip is shown cut away here) until pin holding operating sleeve spring compressed is against front end of forearm and rim of forearm tip is against pin. Remove pin while pressing on operating sleeve and forearm tip. Spring should snap back against end of bolt guide rod and allow operating sleeve to slide back into forearm and over bolt guide rod. Replace forearm tip screws. Operating sleeve must slide back and forth freely without binding when cocking hammer. Sleeve should lock easily when it is turned so that the rib contacts inside of forearm tip at points other than groove for rib on operating sleeve.



**4** Using a suitable spanner as shown, remove buttstock nut and washer. Slide buttstock to rear and off tang and outer magazine tube. In replacing nut, turn it in direction indicated.

verted and, with a long screwdriver, loosen bolt spring guide rod in receiver. Remove bolt spring guide rod while holding spring to prevent its forcible ejection. Reassembly is shown in Fig. 2. Lift rear end of bolt (16) free of receiver and draw bolt out of receiver to rear.

To remove ejector (7) from receiver, unscrew ejector screw (8) through port at right side of receiver. Slide ejector back out of its dovetail and remove from receiver. Reassemble in reverse order.

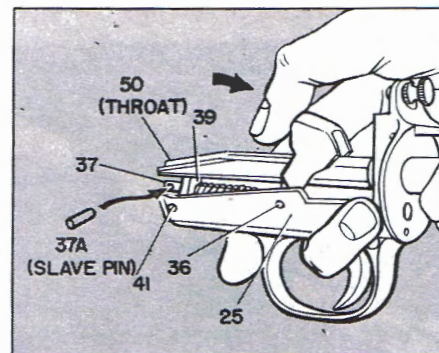
Extractor (20) can be removed from bolt (16) by unscrewing extractor plunger stop screw (23) from right side of bolt. With a sharp tool inserted between extractor plunger (21) and extractor, compress plunger and roll extractor out of bolt toward front. Remove plunger with spring (22) from front of bolt. Firing pin (17) and spring (18) are removed from rear of bolt after drifting out firing pin stop pin (19). Reassemble bolt in reverse order.

To take down tang and buttstock group, remove inner magazine tube by turning magazine plug (55) to left to free locking pin (52) in inner tube from cam lock cut in end of outer magazine tube (50). Pull

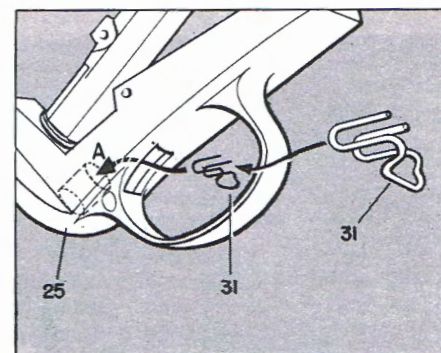
inner magazine tube from stock to rear. Remove buttplate screws (47) and buttplate (46). Remove nut (48) and stock as shown in Fig. 4. Remove trigger lock plunger (32) and spring (33) from rear end of tang (25) after withdrawing stock. Hammer and spring assembly is removed from tang as detailed in Figs. 5 and 6.

Drift out trigger pin (43) and remove trigger (42) and sear (44) from tang, taking care not to lose sear spring (45). Trigger lock (34) may be pushed out of tang from left to right. Trigger spring (31) can be pushed out of tang to rear. Reassembly of the trigger spring in the tang is shown in Fig. 7.

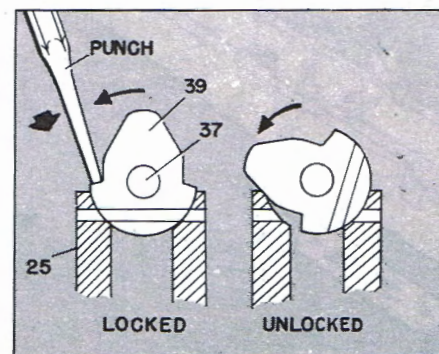
Cartridge cutoff (56) can be removed from throat of outer magazine tube (50) by drifting out pin (57), taking care not to allow escape of spring (58). Removal of takedown screw (26) is accomplished by drifting out pin (30). After removing takedown screw to rear of tang, remove plunger (28) and spring (29) from hole at rear of tang inside takedown screw hole. Removal of outer magazine tube and throat from tang is not recommended. Reassemble tang and stock group in reverse order.



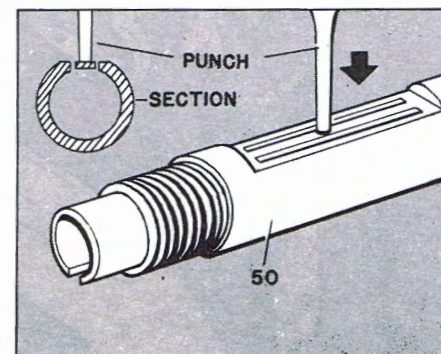
**5** Before removing hammer spring abutment and hammer assembly from tang, pull hammer rearward, compressing hammer spring. Insert a small slave pin as shown through hammer spring guide rod where it protrudes through abutment. Release hammer.



**7** Replace trigger spring through guard into trigger hole in underside of tang in the position that is shown at "A". Press spring firmly into hole in rear of tang with the blade of a screwdriver inserted through guard into tang.



**6** To remove hammer spring abutment, drift out pin (41) and place tang in vise, right side up. Use a suitable drift or punch at right of abutment in groove in tang. Tap abutment around out of groove as shown. Drift out the hammer pin and then remove the hammer and spring assembly from the tang.



**8** Outer magazine is made with fine saw cuts through flattened portion of tube at rear. Grip of outer magazine tube on inner tube is regulated by depressing area between these saw cuts slightly with a punch as shown.



By JAMES M. TRIGGS

# WINCHESTER



THE Winchester Model 69 cal. .22 bolt-action repeating rifle was first announced in January 1935, and initial deliveries were made in March of that year. The Model 69 was an adult-sized rifle with 25" barrel and detachable clip-magazine. Action was of speed-lock type with short striker fall and adjustable trigger. It was regularly furnished with a 5-shot magazine, but 10-shot magazines were available as an accessory item. Sporting, target, and match rifle versions were offered. In late 1937 the bolt mechanism was al-

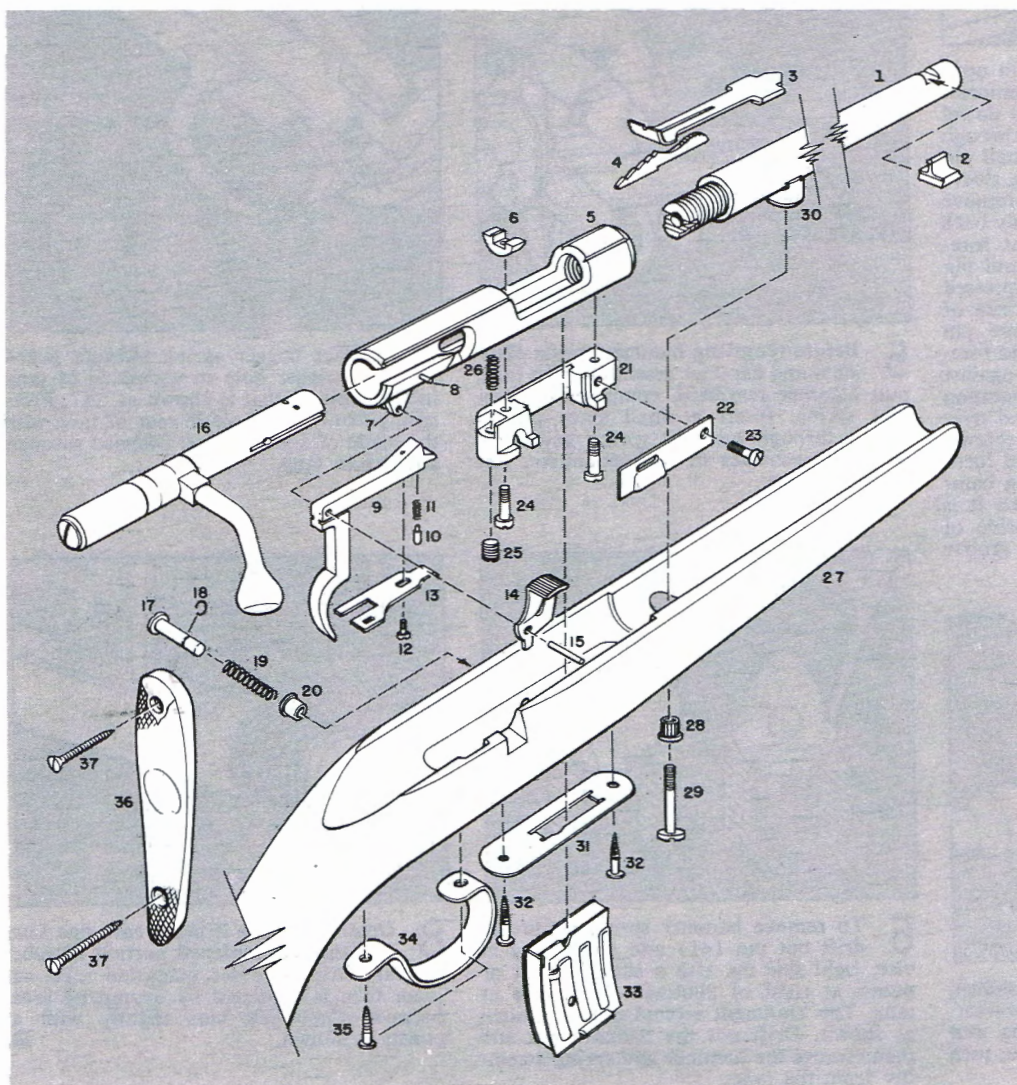
tered to cock on opening rather than closing motion of the bolt. The designation of this rifle was then changed to Model 69A.

From 1937 until 1941 telescopic sights of 2¾X or 4X were offered as accessory items with this rifle, but this practice was not resumed after World War II. Receivers of late production rifles are grooved for popular commercial tip-off scope mounts. A variety of front and rear sights have been furnished for the Model 69 and 69A rifles, and there have been several minor

changes in the furniture. None of these has been of significance from the standpoint of disassembly procedure.

The Model 69A is currently (1963) offered in sporting type and in a target style designated Junior Target Shooter's Special. The sporting rifle has a bead front and open-notch, elevator rear sight. Receiver is tapped for commercial micrometer rear sights. The target version has a Patridge-style blade front sight and Lyman 57 micrometer rear sight. Fore-end sling swivel for 1¼" sling is available on special order.

## Parts Legend



1. Barrel
2. Front sight
3. Rear sight
4. Rear sight elevator
5. Receiver
6. Ejector
7. Trigger base
8. Safety lever stop pin
9. Trigger
10. Safety lock plunger
11. Safety lock plunger spring
12. Safety lock screw
13. Safety lock
14. Safety lever
15. Trigger pin
16. Breechbolt, complete
17. Magazine release plunger
18. Magazine release plunger stop
19. Magazine release plunger spring
20. Magazine release plunger escutcheon
21. Magazine holder
22. Magazine catch
23. Magazine catch screw
24. Magazine holder screws (2)
25. Trigger spring adjusting screw
26. Trigger spring
27. Buttstock
28. Stock stud screw escutcheon
29. Stock stud screw
30. Stock stud
31. Magazine plate
32. Magazine plate screws (2)
33. Magazine
34. Guard bow
35. Guard bow screws (2)
36. Buttplate
37. Buttplate screws (2)



# MODEL 69A RIFLE

## A MAN TO REMEMBER

EDWARD MAYNARD

*Invented the tape primer  
and a breech-loading rifle*

Born—Madison, N. Y., Apr. 26, 1813  
Died—Washington, D. C., May 4, 1891

EDWARD MAYNARD was a brilliant dental theorist who wanted to be a soldier. Born on a farm in upstate New York, he managed to obtain an appointment to the U. S. Military Academy at West Point. Frail health, however, forced him to resign during his first year and turn to dentistry instead.

As a dentist, Maynard achieved an eminent reputation. After completing his training, he moved to Washington, D. C., in 1836 and practiced there, except for short intervals, for the rest of his life. He discovered and announced the existence of dental fevers, became the first to use gold foil in fillings, developed improved dental instruments, and made many important contributions to dentistry. He held the Chair of Theory and Practice at Baltimore Dental College from 1857 until 1891 and a like position at the National University from 1887 until his death.

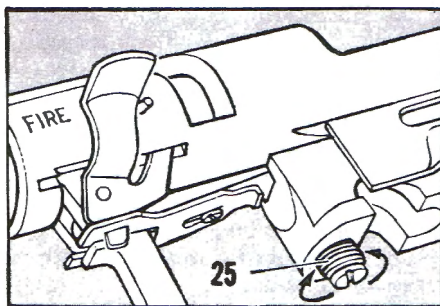
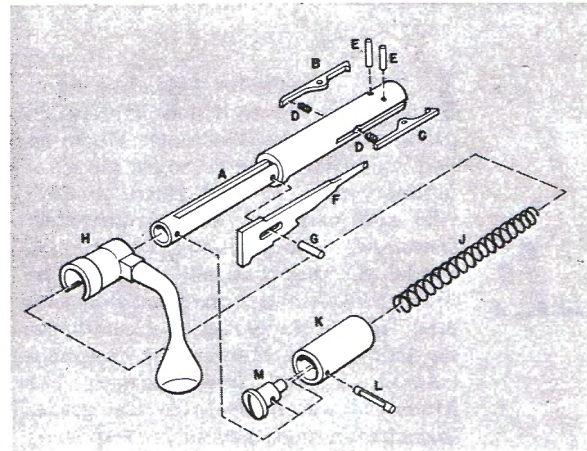
Despite these really great contributions to dental science, Maynard has been best remembered for his inventions in firearms. In 1845 he patented the tape primer which was adopted for official U. S. arms in 1855. In 1851 he invented an improvement in breech-loading rifles which resulted in the Maynard rifle and carbine. In addition to these well-known inventions, he also patented a number of other improvements in firearms, including a means of converting muzzle-loaders to breech-loaders; a method of joining 2 barrels to permit longitudinal expansion or contraction, and a device for indicating the number of cartridges in a magazine firearm.

For his work in dentistry and firearms, Maynard was granted many honors, both at home and abroad. He received several honorary degrees and was an honorary member of a number of scientific bodies. Among other forms of recognition, he was designated court dentist to Emperor Nicholas I of Russia, made a chevalier of the military order of the Red Eagle by the King of Prussia, and accorded a gold medal of merit by the King of Sweden.

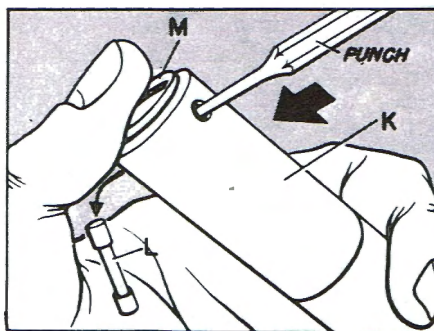
—HAROLD L. PETERSON

### Parts list for breechbolt assembly

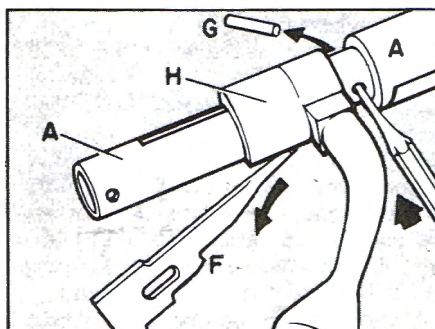
- A. Breechbolt
- B. Extractor, left
- C. Extractor, right
- D. Extractor springs (2)
- E. Extractor pins (2)
- F. Firing pin
- G. Firing pin stop pin
- H. Breechbolt handle and cocking sleeve
- J. Firing pin spring
- K. Breechbolt sleeve
- L. Breechbolt sleeve pin
- M. Breechbolt plug



1 To adjust the trigger pull, turn the trigger spring adjusting screw (25) in (or clockwise) for a heavier pull and out (or counterclockwise) for a lighter pull



2 To disassemble bolt, drift out breechbolt sleeve pin (L) while holding breechbolt plug (M) in as shown, to prevent escape of spring. Remove plug and firing pin spring (J) from breechbolt (A). Slide breechbolt sleeve (K) off to rear



3 Move breechbolt handle and cocking sleeve (H) to rear to expose firing pin stop pin (G) as shown. Drift out pin (G) and drop firing pin (F) out bottom of breechbolt and to rear as shown. Breechbolt handle and cocking sleeve (H) can be removed to rear. Extractors (B & C) and springs (D) can be removed from breechbolt by drifting out pins (E). Reassemble in reverse order

### Disassembly Procedure

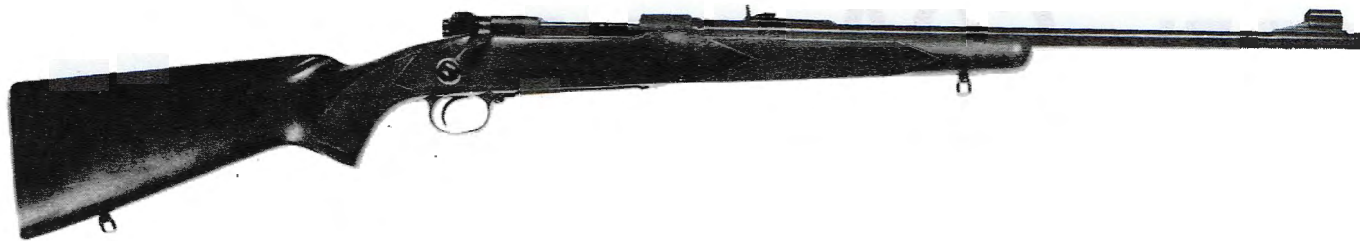
To remove bolt (16) open breech, pull trigger, and slide bolt out to rear. Press in magazine release plunger (17) and pull magazine (33) out bottom of stock.

Unscrew stock stud screw [takedown screw] (29) and lift barrel and receiver assembly up out of stock.

To disassemble trigger mechanism, remove magazine holder screws (24) and drop magazine holder (21) from bottom of receiver, taking care not to lose trigger spring (26). Remove ejector (6) from top of receiver. Drift out trigger pin (15) and remove trigger (9) and safety lock parts (10, 11, 12, 13, 14) intact.

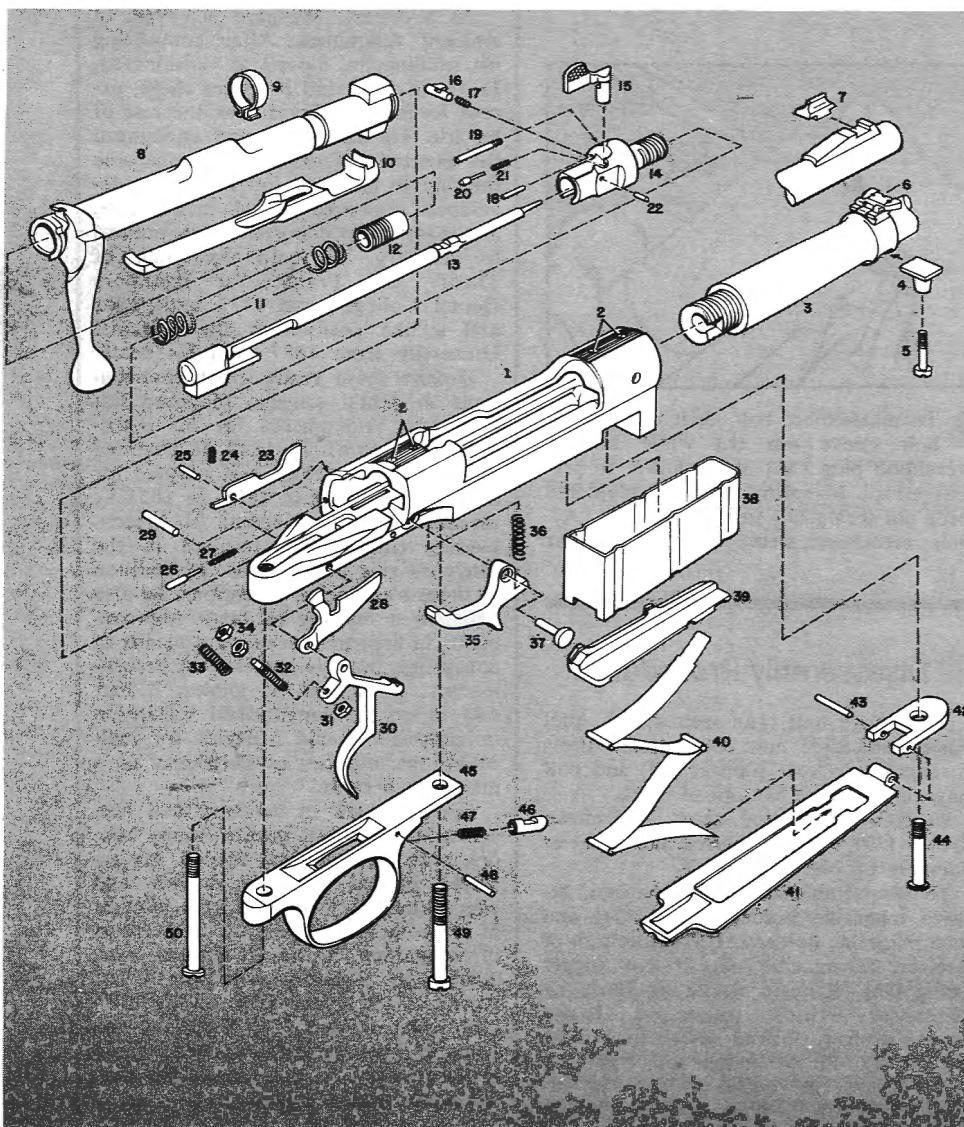
Reassemble in reverse order. The accompanying illustrations describe breechbolt disassembly in detail.





# WINCHESTER MODEL 70 RIFLE

By James M. Triggs



IN 1925, Winchester Repeating Arms Co., New Haven, Conn., announced production of the Winchester Model 54 bolt-action rifle chambered for the revolutionary cal. .270 WCF cartridge. Both rifle and cartridge were immediately successful. The action design of the Model 54 was basically that of the Mauser 98. It had a one-piece bolt with dual front locking lugs, cock-on-opening action, and a Mauser-type staggered-column, integral box-magazine. The Model 54 was made in several grades and chamberings, and in both sporting and target styles.

In 1937 the Model 54 was displaced by the Model 70 bolt-action rifle incorporating several improvements, including an independent bolt stop, hinged floorplate, speed-lock ignition, forged-steel trigger guard, and a better stock design. The Model 70 also featured a safety permitting installation of low-mounted scope sights, and a single-stage trigger of superior design. The bolt handle was redesigned for lowest possible scope mounting and the knob positioned opposite the trigger for maximum effectiveness in rapid-fire.

Since its introduction the Model 70 has achieved an enviable reputation throughout the world. Many consider it to be the finest factory-made bolt-action rifle. It has been produced in a variety of styles for target and sporting purposes. The list of chamberings ranges from the tiny .22 Hornet through the 458 Winchester Magnum.

It is currently available in cals. .220 Swift, .243 Winchester, .264 Winchester Magnum, .270 Winchester, .308 Winchester, .30-'06, .300 H&H Magnum, .338 Winchester Magnum, .375 H&H Magnum, and .458 Winchester Magnum. Obsolete chamberings are .22 Hornet, .250 Savage, .257 Roberts, 7 mm. Mauser, 7.65 mm. Mauser, 9 mm. Mauser, .358 Winchester, and .35 Remington.

A development of the post World War II period is the Featherweight model with aluminum-alloy trigger guard, floorplate, and buttplate, and lightened barrel and stock.

Although the basic Model 70 action design has remained virtually unchanged since its introduction, there have been numerous changes in styles, models, and available calibers.



# DISASSEMBLY PROCEDURE

Check action to be sure rifle is unloaded. Remove breech bolt assembly from receiver. Breech bolt disassembly is shown in detail in illustrations at right.

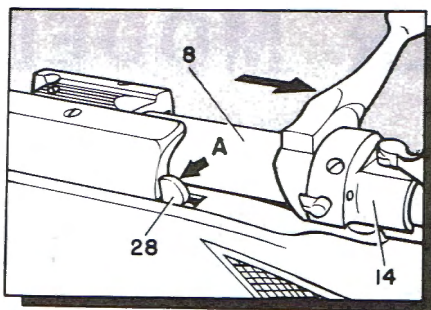
To remove receiver (1) and barrel (3) from buttstock, remove forearm stud screw (5), magazine cover hinge plate screw (44), magazine cover assembly complete with magazine spring (40) and follower (39), and front and rear guard bow screws (49-50). Lift receiver and barrel out of buttstock carefully. Remove guard bow (45) from buttstock.

Receiver parts—ejector (23), bolt stop (28), trigger (30), sear (35) with respective springs—are all easily removed from receiver by drifting out their appropriate pins. Bolt stop plunger (26) and spring (27) are removed from hole at left rear of receiver after removing bolt stop. Assembly is accomplished in reverse order. To facilitate correct reassembly, care should be taken to keep springs and pins in order.

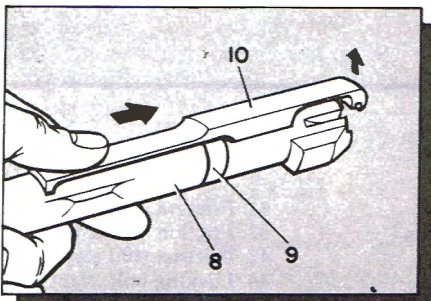
## Parts Legend

1. Receiver
2. Receiver plug screws
- 2A. Metallic sight base plug screws (in left of receiver—not shown here)
3. Barrel
4. Forearm stud
5. Forearm stud screw
6. Rear sight assembly (Lyman shown here—various types available)
7. Front sight (various types available)
8. Breech bolt
9. Extractor ring
10. Extractor
11. Firing pin spring
12. Firing pin sleeve
13. Firing pin
14. Breech bolt sleeve
15. Safety lock (old style)
16. Breech bolt sleeve lock
17. Breech bolt sleeve lock spring
18. Breech bolt sleeve lock pin
19. Firing pin stop screw
20. Safety lock plunger
21. Safety lock plunger spring
22. Safety lock stop pin
23. Ejector
24. Ejector spring
25. Ejector pin
26. Bolt stop plunger
27. Bolt stop plunger spring
28. Bolt stop
29. Trigger pin
30. Trigger
31. Trigger stop screw nut
32. Trigger stop screw
33. Trigger spring
34. Trigger spring adjusting nuts (2)
35. Sear
36. Sear spring
37. Sear pin
38. Magazine
39. Magazine follower
40. Magazine spring
41. Magazine cover
42. Magazine cover hinge plate
43. Magazine cover hinge pin
44. Magazine cover hinge plate screw
45. Guard bow
46. Magazine cover catch
47. Magazine cover catch spring
48. Magazine cover catch pin
49. Front guard bow screw
50. Rear guard bow screw

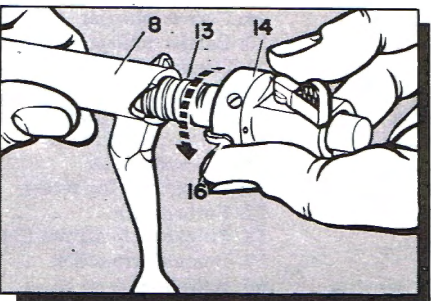
Note—Buttstock, buttplate, screws, various sling swivels available, and remaining standard buttstock fittings are omitted for clarity



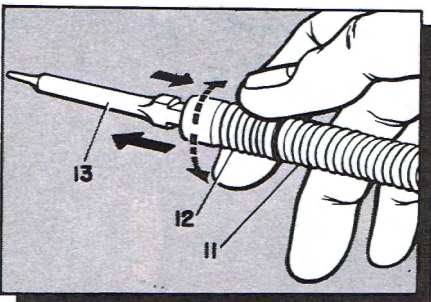
- 1 To remove breech bolt assembly, depress bolt stop (28) as shown at "A" and draw bolt to rear and out of receiver



- 2 Turn extractor (10) to position shown and push forward, releasing extractor from lips of extractor ring (9)



- 3 With rifle cocked, move safety lock (15) to intermediate position between "safe" and "fire". Then remove bolt, depress breech bolt sleeve lock (16), and unscrew percussion assembly from breech bolt and move safety lock to "fire" position



- 4 To remove firing pin spring (11), grasp firing pin sleeve (12) and pull to rear slightly. Turn firing pin sleeve 1/4 turn in either direction as shown and allow sleeve (12) and spring (11) to come forward, taking care to avoid letting the tightly compressed spring get away. Remove spring and sleeve from firing pin. Breech bolt sleeve (14) can be removed from firing pin by unscrewing firing pin stop screw (19). Reassembly is accomplished in reverse order

## A MAN TO REMEMBER

### SAMUEL COLT

*Produced the first practical revolver*



BORN July 19, 1814, in Hartford, Conn., the son of Christopher Colt, a manufacturer of cottons and woollens. Samuel Colt's boyhood was characterized by financial struggle and family insecurity. When he was 7 years old, his mother died, and his father's business failed. Being thus deprived of a settled home life, he spent the next few years in a number of places and occupations. He was apprenticed at 10 to a bleacher and dyer. He worked as a farm laborer, and in between he attended various schools until his natural mischievousness caused him to be removed from a preparatory school at Amherst when he was 16. His academic career ended, Colt signed on as a seaman for a voyage to India, and it was on the return trip in 1830 that he whittled out the first model of his design for a new revolving firearm.

Upon his return from the sea, Colt set out to perfect and patent his invention, supporting himself among other ways with lectures on chemistry and practical demonstrations of laughing gas. In 1831 he set a gunsmith to work on his first models; and during 1833-35 he produced several pistols and rifles in Baltimore. British and French patents were granted in 1835, and he obtained his first U. S. patent in 1836. Shortly thereafter he opened his first factory in Paterson, N. J., but failure to obtain large orders brought on bankruptcy. Finally in 1847, an Army order for the famous Walker revolver put Colt back in business, first at Whitneyville and then in Hartford. The business expanded rapidly as Colt perfected his gun and added new models. The revolver, and Colt with it, were a success.

Colt's great contribution to the development of firearms was the production of the first practical revolving cylinder firearm, embodying as its leading feature the automatic rotation of the cylinder in cocking by a pawl on the hammer engaging a ratchet on the end of the cylinder.

Colt died Jan. 10, 1862.—HAROLD L. PETERSON



# WINCHESTER MODEL 71 RIFLE

By JAMES M. TRIGGS



## Parts Legend

- |                                   |                                 |                                   |
|-----------------------------------|---------------------------------|-----------------------------------|
| 1. Barrel                         | 23. Finger lever connecting pin | 41. Friction stud                 |
| 2. Front sight                    | 24. Extractor                   | 42. Friction stud spring          |
| 3. Front sight cover              | 25. Extractor pin               | 43. Friction stud stop pin        |
| 4. Rear sight                     | 26. Firing pin                  | 44. Locking bolt, right           |
| 5. Rear sight blank               | 27. Firing pin stop pin         | 45. Locking bolt, left            |
| 6. Receiver                       | 28. Hammer                      | 46. Finger lever bushing pin      |
| 7. Cartridge stop                 | 29. Hammer screw bushing        | 47. Finger lever bushing          |
| 8. Cartridge stop screw           | 30. Hammer screw                | 48. Carrier                       |
| 9. Cartridge guide                | 31. Hammer spring guide rod     | 49. Carrier plunger               |
| 10. Cartridge guide screw         | 32. Hammer spring guide rod pin | 50. Carrier plunger spring        |
| 11. Cartridge guide screw bushing | 33. Hammer spring               | 51. Carrier plunger pin           |
| 12. Spring cover base             | 34. Hammer spring abutment      | 52. Magazine tube                 |
| 13. Spring cover leaf             | 35. Hammer spring abutment pin  | 53. Magazine spring               |
| 14. Spring cover base screw       | 36. Lower tang                  | 54. Magazine follower             |
| 15. Spring cover leaf pin         | 37. Trigger                     | 55. Magazine plug                 |
| 16. Spring cover spring           | 38. Trigger pin                 | 56. Magazine plug screw           |
| 17. Spring cover stop pin         | 39. Trigger spring              | 57. Forearm tip                   |
| 18. Upper tang screw              | 40. Finger lever                | 58. Forearm tip screws (2)        |
| 19. Breechbolt                    |                                 | 59. Forearm tip tenon             |
| 20. Ejector                       |                                 | 60. Buttplate                     |
| 21. Ejector spring                |                                 | 61. Buttplate screws (2)          |
| 22. Ejector collar                |                                 | Note: Stock and forearm not shown |

THE Winchester Model 71 lever-action rifle was first announced in January 1936. Of solid-frame construction, the Model 71 was essentially a revamped version of the famous Brownie-designed Model 1886 rifle.

The rimmed .348 Winchester cartridge, designed especially for the Model 71, was offered in 150-, 200-, and 250-gr. loadings to give a range of power adequate for virtually all American big game. No other commercial rifle was chambered for this cartridge.

The Model 71 was initially furnished with both 20" and 24" barrels, but the 20"-barrel model was discontinued in 1947. The deluxe model was stocked in selected walnut and both pistol grip and fore-end were checkered. The pistol grip was capped with hard rubber. Quick-detachable swivels with 1" leather sling were standard.

The lower-priced standard model had a plain stock, with no swivels or sling. Deluxe and standard models were available with aperture or open rear sights.

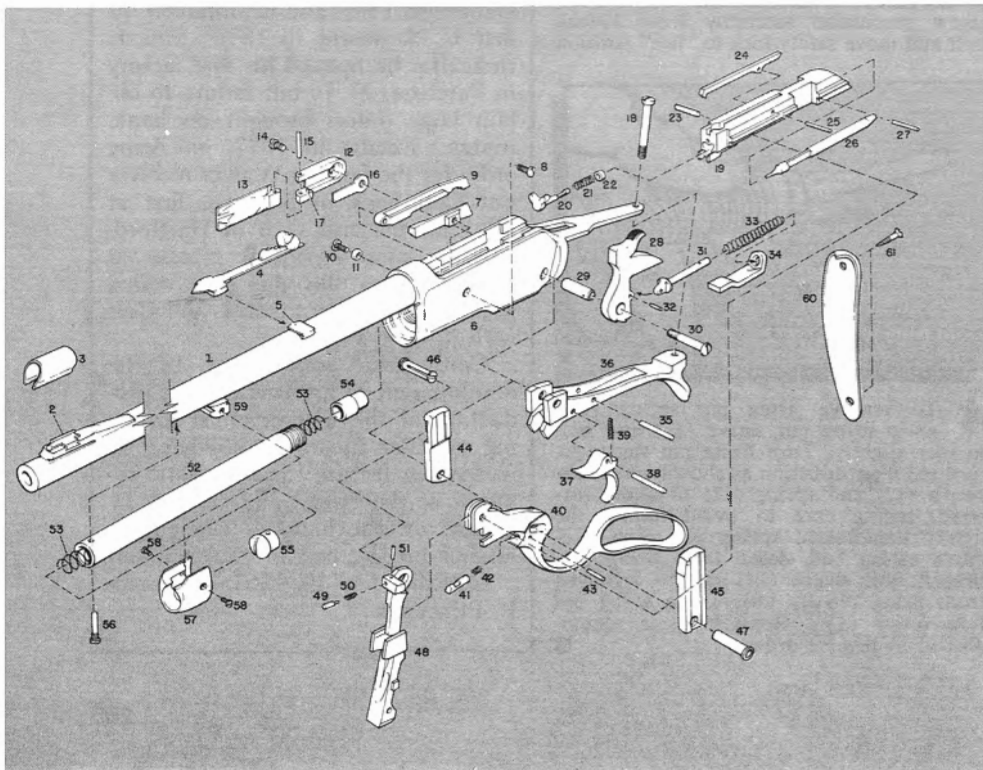
The Model 71 was discontinued in 1958.

## Disassembly Procedure

Lower lever (40) and check action to be sure rifle is unloaded.

To disassemble magazine assembly, unscrew magazine plug screw (56) and remove plug (55), withdrawing magazine spring (53) and follower (54) at same time. Remove forearm tip screws (58) and slide forearm tip (57) up on magazine tube slightly. Using a punch or similar tool through magazine plug screw holes at front end of magazine tube, unscrew tube from receiver. Remove magazine tube and forearm from receiver.

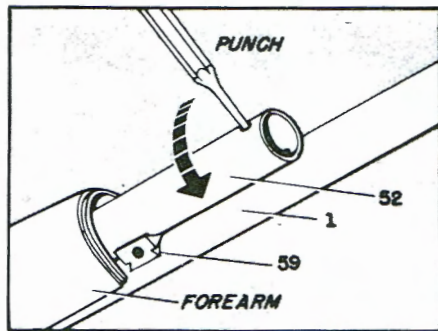
To disassemble action, remove upper tang screw (18) and pull buttstock off receiver to rear. Buttstock may require sharp rap with the hand to loosen it. Remove spring cover base screw (14) and lift spring cover assembly (parts 12, 13, 15, 16, and 17) up out of receiver. Drift out hammer spring abutment pin (35), taking care not to allow abutment to escape under tension of hammer spring. Remove hammer spring abutment (34) and lift small



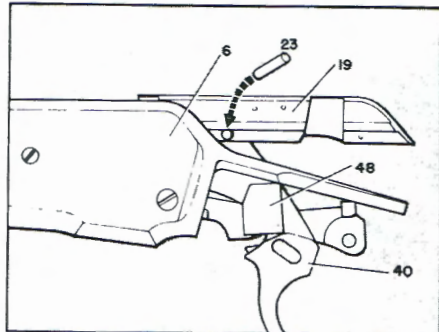


## FAMOUS FIREARMS

### The Plains Rifle



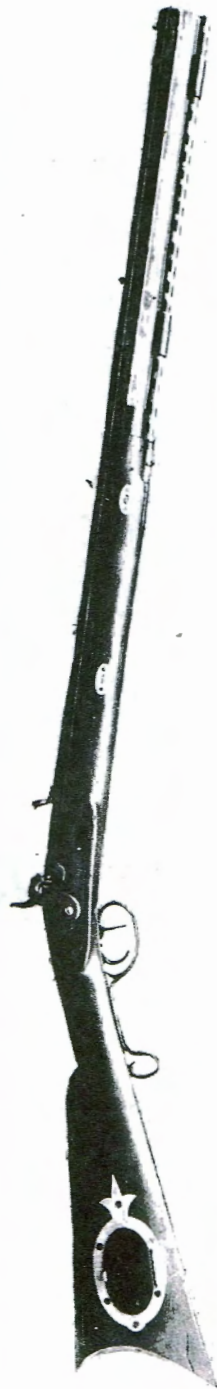
**1** After removing magazine plug screw (56), magazine plug (55), spring (53), and follower (54), unscrew magazine tube (52) as shown, using a punch or similar tool through the plug screw holes at front end of magazine tube



**2** When reassembling breechbolt (19), finger lever (40), and carrier (48), the parts should be replaced in receiver as shown. When replacing finger-lever connecting pin (23) through bolt and top of finger lever, be sure ejector (20) is pushed as far back into bolt as possible

spring (39) out top of trigger (37). Remove hammer screw (30) and hammer screw bushing (29) and lift hammer (28) with hammer spring (33) and guide rod (31) out top of receiver. Lower tang (36) may be knocked out bottom of receiver to rear. Drift out finger lever bushing pin (46) from left to right and remove finger lever bushing (47). Note that finger lever bushing pin is a slotted pin and should not be mistaken for a screw. Remove right and left locking bolts (44 and 45) from bottom of receiver. Lower finger lever, moving breechbolt back out of receiver until finger-lever connecting pin (23) is exposed. Drift out pin (23) with a punch and remove breechbolt (19) to rear, taking care not to allow ejector (20), spring (21), or collar (22) to escape. Drop finger lever (40) and carrier (48) out bottom of receiver. Remove cartridge guide screw (10) and bushing (11) from right side of receiver and drop cartridge guide (9) out of receiver. Remove cartridge stop screw (8) from left side of receiver and drop cartridge stop (7) out of receiver.

Reassemble in reverse order. Install breechbolt and finger lever, carrier, and locking bolts before attempting to replace cartridge guide. Cartridge guide can be replaced through spring cover hole in right side of receiver with rear end of cartridge guide in place in right locking bolt. ■



THE term 'plains rifle' is a modern one, coined by collectors to designate the short heavy rifle favored by the fur traders and frontiersmen of the American West in the years from 1820 to 1860. Contemporaries usually called them 'mountain rifles' or sometimes 'Hawkins rifles' in a corruption of the name of the Hawken brothers who were the most famous makers of these arms.

Whatever the name, the plains rifle was a distinctive arm developed for a specific need. The long Kentucky rifle with its small bore had suited the needs of the wooded East where most hunting was done on foot and most game was small. In the West distances were greater, men traveled on horseback, and animals such as the buffalo and the grizzly bear took a lot of killing. Thus a new gun was needed. The long barrel was a nuisance on horseback. It was shortened to a length between 28" and 38". Calibers were increased for greater stopping power to an average of .50 to .55, and the barrels were made heavy enough to withstand a minimum service charge of 100 grs. Stocks were sometimes full-length to the muzzle, sometimes short half-stocks. Either way they were made strong—thick in the wrist and wide in the butt. The grace of the slender, long rifle stock disappeared, but here was a stock that would not break at the first fall from a horse's back. The familiar brass and silver mountings of the eastern rifle usually gave way to simple iron furniture, less, perhaps, for functional reasons than to reduce cost although there may have been some thought of sunlight reflecting from the softer metals.

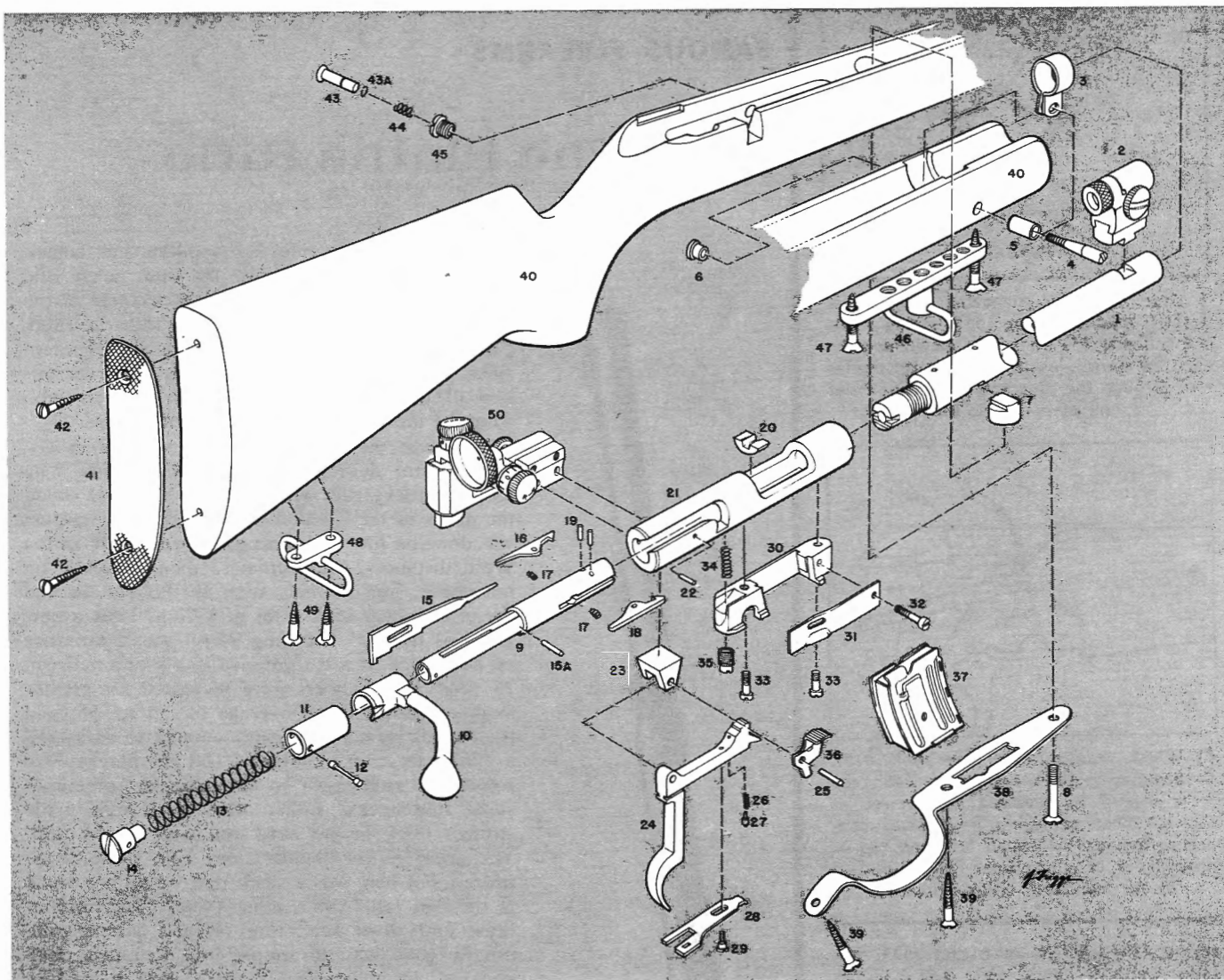
There were other distinctive characteristics as well. Most noticeable was the weight. The huge powder charges, sometimes reaching 215 grs., would have kicked unmercifully in a light gun. Thus many plains rifles weighed 12 to 15 lbs., or possibly a little more.

Among the most famous makers of plains rifles were Jacob and Samuel Hawken and Horace Dimick of St. Louis, E. K. Tryon of Philadelphia, H. E. Leman of Pittsburgh, Carlos Gove, J. P. Lower, and Morgan Rood of Denver, and Jasper Maltby of Galena, Ill.

The first plains rifles were flintlocks, but by the time the type had reached its full development the percussion system was in almost universal use. From 1830 through the close of the Civil War the percussion plains rifle reigned supreme among frontiersmen in the West. Then, with the end of hostilities, the big Sharps breech-loaders superseded the muzzle-loading rifles for long-range buffalo hunting, and the Spencer, Henry, and Winchester repeaters became the popular light rifles. By 1875 the plains rifle had all but disappeared.

—HAROLD L. PETERSON





# WINCHESTER MODEL 75

By James M. Triggs

## Legend

- |   |                                |  |
|---|--------------------------------|--|
| 1. Barrel                                 | 18. Right-hand extractor       | 35. Trigger spring adjusting screw           |
| 2. Front sight assembly                   | 19. Extractor pins (2)         | 36. Safety lever                             |
| 3. Barrel band                            | 20. Ejector                    | 37. Magazine assembly                        |
| 4. Barrel band screw                      | 21. Receiver                   | 38. Guard bow                                |
| 5. Barrel band screw bushing              | 22. Safety lever stop pin      | 39. Guard bow screws (2)                     |
| 6. Barrel band screw escutcheon           | 23. Trigger base               | 40. Butt stock                               |
| 7. Stock stud                             | 24. Trigger                    | 41. Buttplate                                |
| 8. Stock stud screw                       | 25. Trigger pin                | 42. Buttplate screws (2)                     |
| 9. Breech bolt                            | 26. Safety lock plunger spring | 43. Magazine release plunger                 |
| 10. Breech bolt handle and cocking sleeve | 27. Safety lock plunger        | 43A. Magazine release plunger stop           |
| 11. Breech bolt sleeve                    | 28. Safety lock                | 44. Magazine release plunger spring          |
| 12. Breech bolt sleeve pin                | 29. Safety lock screw          | 45. Magazine release plunger escutcheon      |
| 13. Firing pin spring                     | 30. Magazine holder            | 46. Forearm adjustment base assembly         |
| 14. Breech bolt plug                      | 31. Magazine catch             | 47. Forearm adjustment base screws (2)       |
| 15. Firing pin                            | 32. Magazine catch screw       | 48. Stock swivel base assembly               |
| 15A. Firing pin stop pin                  | 33. Magazine holder screws (2) | 49. Stock swivel base assembly screws (2)    |
| 16. Left-hand extractor                   | 34. Trigger spring             | 50. Receiver sight assembly (Redfield 75 HW) |
| 17. Extractor springs (2)                 |                                |  |



**F**IRST announced in 1939 as a moderately-priced companion piece to the more expensive Model 52 rifle, the Winchester Model 75, chambered for the .22 long rifle cartridge, soon earned an enviable reputation for fine accuracy and reliability. The Model 75 has a speed lock and features a detachable-clip magazine, and like the Model 52 is offered in both target and sporting versions.

The Model 75 Sporter is currently available with two sighting combinations, including open rear and bead front sight or Lyman 57E aperture receiver sight and bead front sight. Barrel length is 24 inches. Both pistol grip and forearm are checkered. Weight is about 5¾ pounds.

The Model 75 Target rifle has a 28-inch barrel and weighs about 8½ pounds. The beavertail stock is relatively straight to facilitate shooting in the prone position and is factory-equipped with metal base adjustment swivel allowing various adjustments of the sling strap. The Model 75 Target is furnished without sights for those who wish to select and install their own, or is available with Redfield 75 HW aperture receiver sight and Winchester 105A front sight. This model was at one time offered with an eight-power telescopic sight of Winchester make, since discontinued.

During the World War II period, the U. S. Government purchased large quantities of the Model 75 Target rifle for use in Service marksmanship training programs.

## WINCHESTER MODEL 75

### Disassembly Procedure

Turn the bolt handle (10) upward and, holding the trigger (24) back, withdraw the bolt to the rear. Remove the magazine (37) and unscrew the barrel band screw (4) from the fore-end. After removing the stock stud screw (8), the barrel (1) and receiver assembly can be removed from the stock (40). For all normal cleaning purposes, this is sufficient disassembly.

To take down the bolt, gently drift out the breech bolt sleeve pin (12) taking care not to allow the breech bolt plug (14) and firing pin spring (13) to escape when withdrawal of the sleeve pin releases the compressed spring. In drifting out the sleeve pin, the punch or drift used should fit the sleeve pin hole and will serve to prevent the forceful ejection of the plug and spring. Drift out the firing pin stop pin (15A). With the breech bolt handle and cocking sleeve (10) all the way forward in the position shown in Fig. 2, the firing pin (15) can be withdrawn from the bolt toward the rear. The bolt handle and cocking sleeve (10) can now be slid off the rear of the bolt proper. The left- and right-hand extractors (16, 18) may be removed by drifting out their retaining pins (19), using care to prevent the loss of the small extractor springs (17). For ordinary cleaning purposes, disassembly of the bolt is not recommended and should only be undertaken by an experienced person when necessary for repair or replacement of broken parts.

## A MAN TO REMEMBER

BENJAMIN TYLER HENRY

*Developed Henry rifle  
and cartridge*

*Born—Claremont, N. H.,  
Mar. 22, 1821*

*Died—New Haven, Conn.,  
June 8, 1898*



**B.** TYLER HENRY left school at the age of 16 to begin his career as a machinist. Almost immediately he became involved with firearms. His apprenticeship was served with J. B. Ripley & Co., gunsmiths of Claremont and patentees of a "waterproof rifle" which had been developed in 1839. This gun has been described as an intermediate step between the Hall breech-loading flintlock and the Spencer cartridge repeater. It was never popular, but it did provide young Henry with a knowledge of the problems of breech-loading and repeating firearms. After his service with Ripley there followed a series of short terms with various gun shops, including the Springfield Armory, terminating about 1842 with his employment by N. Kendall & Co. which merged in 1843 to form Robbins, Kendall & Lawrence.

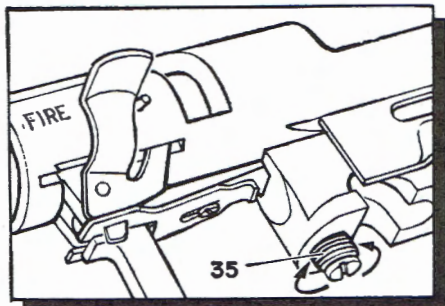
At the Robbins, Kendall & Lawrence Armory, Henry had his first contact with the system which he was later to perfect into the Henry rifle. This was Lewis Jennings's improved version of Walter Hunt's "volitional repeater", which the armory started to produce in 1850. Here also Henry first met Daniel Wesson and later Horace Smith, who were developing their Volcanic arms. When the New Haven Arms Co. was organized by Oliver Winchester to make Volcanic arms, Henry joined the firm and supervised production.

It was during this period that Henry devised the improvements in these arms which led to the Henry and the Winchester rifles. In 1858 he began experimenting with a .44 rimfire cartridge which he soon perfected. Then he adapted the Volcanic rifle to use the new ammunition. He altered the bolt and divided the firing pin so that it struck both sides of the cartridge rim and so reduced the chances of misfires.

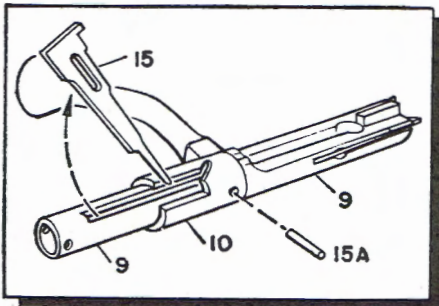
A patent was granted on these features in 1860, and the Henry rifle was put into production. Henry received no royalty for his inventions but was allowed to hold a contract for their manufacture which netted him over a 5-year period some \$7,500 more than he would have made if he had retained his salary as superintendent. He left Winchester in 1866 and operated a machine shop in New Haven until his death.—HAROLD L. PETERSON

# TARGET RIFLE

**1** To adjust the trigger pull, remove the barrel and receiver assembly from the stock. Turn the trigger spring adjusting screw (35) in (or clockwise) for a heavier pull and out (or counterclockwise) for a lighter pull



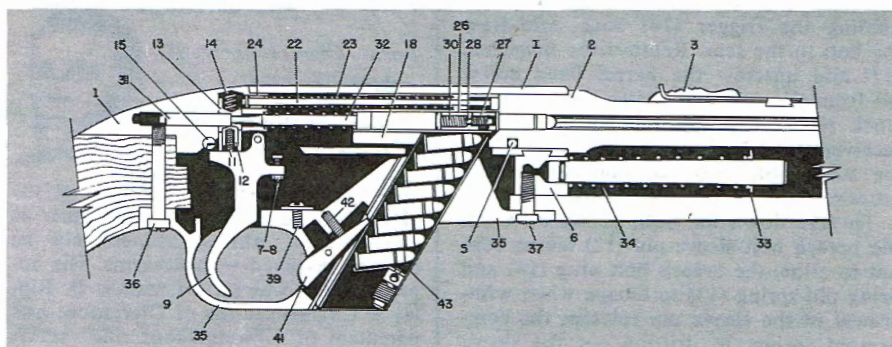
**2** The correct relative position of the breech bolt (9) and breech bolt handle and cocking sleeve (10) to allow removal of the firing pin (15)





# WINCHESTER MODEL 77 RIFLE

By JAMES M. TRIGGS



Section of clip-magazine model with magazine in place, round in chamber

THE Winchester Model 77 self-loading rifle, chambered for the cal. .22 long rifle cartridge, was introduced in 1955. Both tubular magazine and detachable clip versions were offered under the same model number designation.

The Model 77 fires from a closed breech and ejects empty cases from a port in the right side of the receiver. The trigger guard is of nylon plastic. Receiver is grooved for tip-off scope mounts. The thumb-operated safety on the right side blocks the trigger. There is no hold-open device in the bolt mechanism and single loading through the ejection port is not practicable.

The Model 77 weighs about 5½ lbs. Standard barrel length is 22". Cartridge capacity of the detachable clip is 8 rounds; capacity of the tubular magazine is 15 rounds.

The Model 77 is a well-engineered adult-sized rifle designed for small-game hunting and plinking.

## Tubular Magazine Model—Disassembly Procedure

Remove inside magazine tube (20) and check chamber to insure it is unloaded. Check throat (13) to insure that it is unloaded. (If magazine follower can be seen in throat through ejection port at right side of receiver, throat is unloaded.) Cock gun and pull trigger. Hold gun inverted and remove guard screw (22) and recoil block screw (25). Lift barrel and action assembly out of stock.

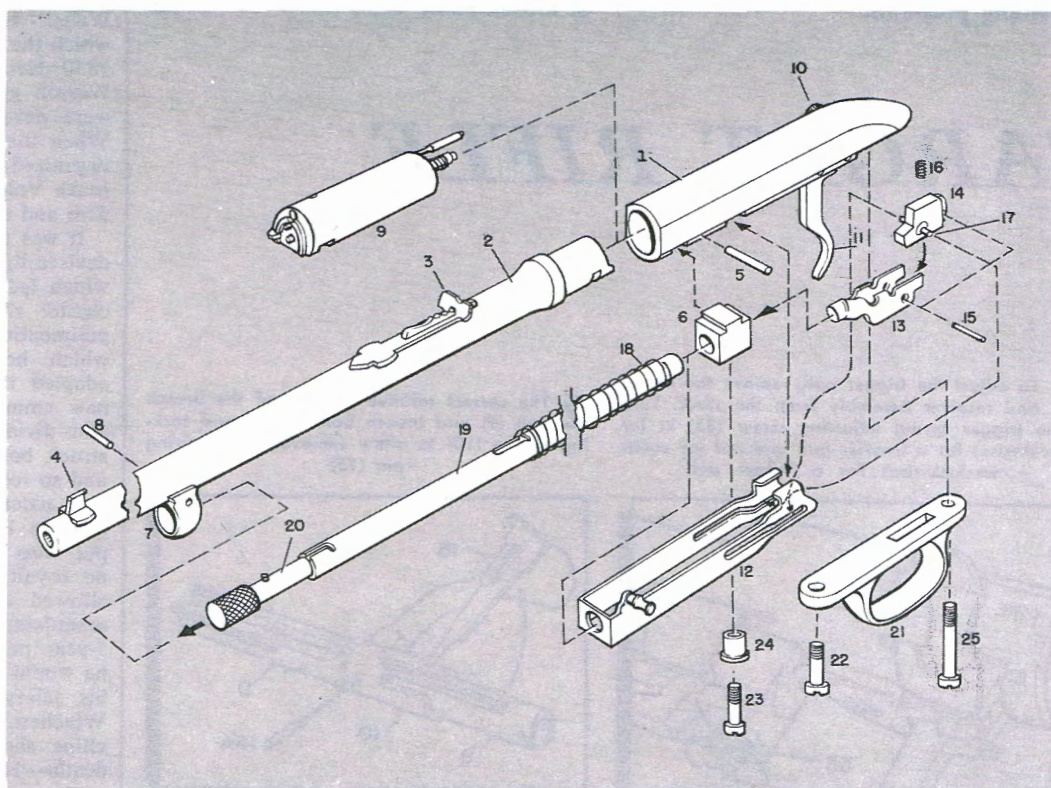
Barrel, with mainspring (18) and outside magazine tube, are separated from receiver in same manner as in clip magazine model described. Throat (13) is disengaged from operating slide (12) by spreading sides of slide apart and freeing pins in carrier (14) which engage cams in operating slide. Ends of operating slide should be in clearance cuts in receiver during this operation. Holding action in-

verted, push throat into receiver stud (6), freeing ears on rear end of throat from recess in receiver. Lift throat assembly upward and toward rear, out of receiver. Operating slide (12) is removed as described for clip magazine model.

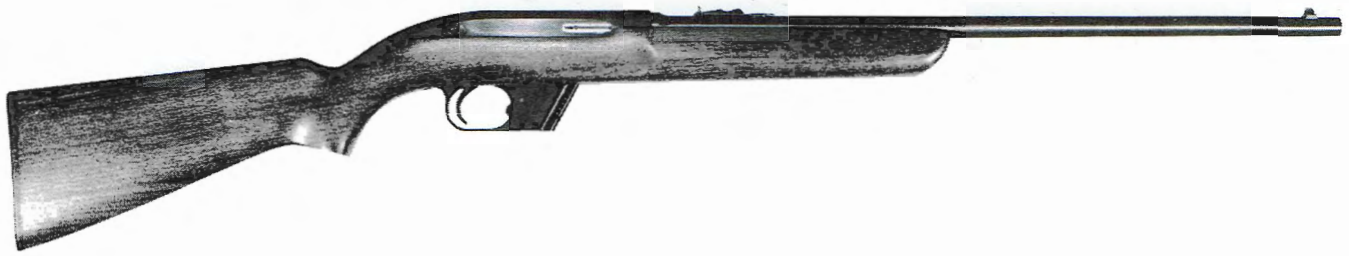
Trigger mechanism and bolt assembly are both disassembled in same manner described for clip magazine model. Reassemble in reverse order.

## Parts Legend

1. Receiver
2. Barrel
3. Rear sight
4. Front sight
5. Barrel locating pin
6. Receiver stud
7. Magazine ring
8. Magazine ring pin
9. Bolt assembly, complete
10. Safety assembly, complete
11. Trigger
12. Operating slide
13. Throat
14. Carrier
15. Carrier pin
16. Carrier spring
17. Cartridge cutoff pin and washer
18. Mainspring
19. Magazine tube, outside
20. Magazine tube assembly, inside
21. Guard
22. Guard screw (with nut)
23. Receiver stud screw
24. Receiver stud screw escutcheon
25. Recoil block screw







## Clip Magazine Model—Disassembly Procedure

Remove magazine (43) and check chamber to insure gun is not loaded. Cock action and pull trigger to release tension on springs so striker in bolt will not be ejected forcibly during disassembly. Hold gun upside-down and remove stock stud screw (37) and recoil block screw (36). Stock may now be separated from barrel and action assembly.

Barrel (2) is removed from receiver (1) by drifting out barrel locating pin (5) and pulling receiver straight back off barrel.

Take care not to twist receiver on barrel during removal. To remove operating slide assembly (33), hold receiver inverted and press sides of slide apart, disengaging lugs on rear end of slide from T-slots on either side of bolt (18). Enclose operating slide with hand during removal to prevent escape of compressed mainspring (34). Lift rear end of slide (with lugs) upward out of bolt and receiver through clearance slots in receiver and slide operating slide forward and off operating slide guide assembly (6), freeing slide and spring.

Bolt (18) is removed by holding receiver inverted and pushing bolt forward out of receiver with help of screwdriver blade inserted in slots in bottom of receiver just behind bolt.

Trigger assembly is removed from receiver by drifting out trigger pin (10) while holding trigger to prevent escape of compressed sear spring (14). Remove trigger and note positions and relation of disconnecter (12), sear (13), sear spring (14), and disconnecter spring (11) before

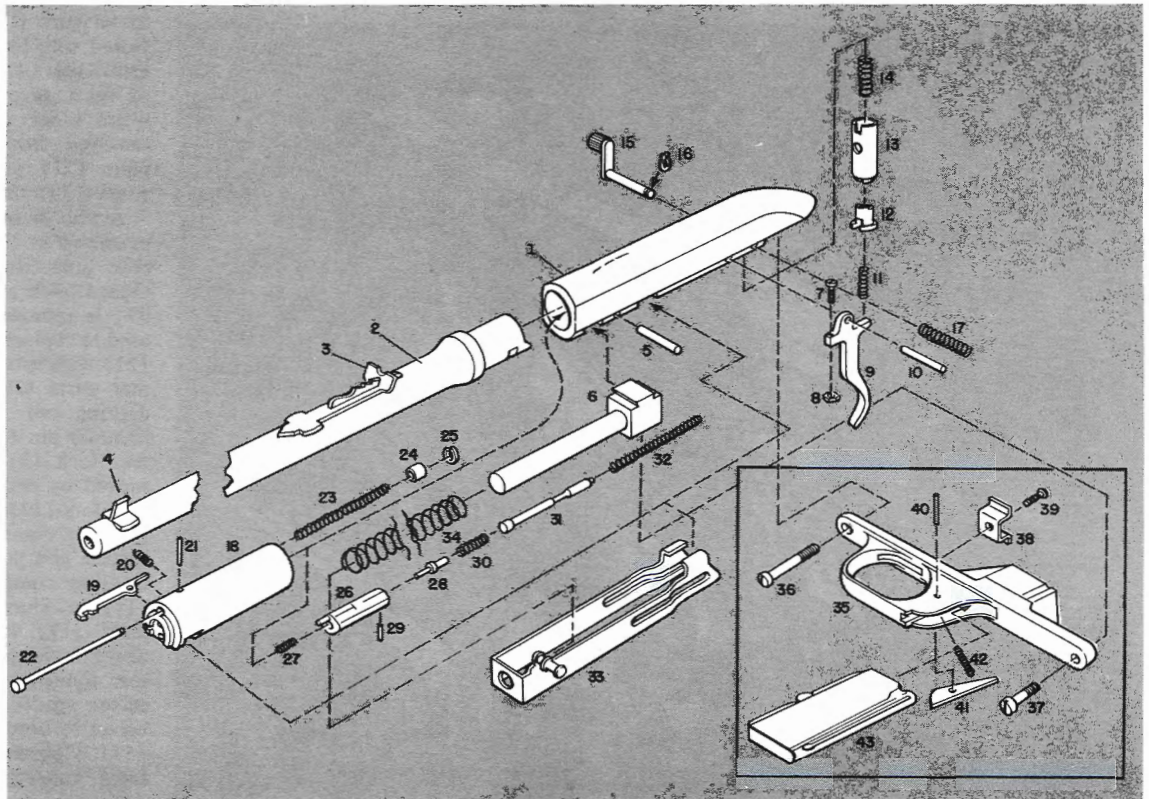
removing them from hole in underside of receiver. Safety lever (15) is removed by removing retaining washer (16) from end of safety lever and withdrawing lever to right side of receiver. Spring (17) may be drawn out from left side of receiver.

To disassemble bolt (18), draw striker (31) and spring (32) out of bolt to rear. Grasp timing rod collar (24) and pull it toward front of bolt compressing spring (23). While holding spring compressed, remove retaining ring (25) and remove timing rod (22) from front of bolt and spring (23) and collar (24) from rear of bolt. Extractor (19) and firing pin assembly (26 through 30) are removed by drifting out extractor pin (21). Firing pin assembly is disassembled by drifting out ejector spring pin (29). To avoid confusing extractor spring (20) and firing pin retracting spring (27), note that firing pin retracting spring (27) is colored blue. The gun will not function properly if these 2 springs are interchanged. Reassemble in the reverse order. ■

### Parts Legend

1. Receiver
2. Barrel
3. Rear sight
4. Front sight
5. Barrel locating pin
6. Operating slide guide assembly
7. Trigger stop screw
8. Trigger stop screw nut
9. Trigger
10. Trigger pin
11. Disconnecter spring
12. Disconnecter
13. Sear
14. Sear spring
15. Safety lever
16. Safety lever retaining washer
17. Safety spring
18. Bolt
19. Extractor
20. Extractor spring
21. Extractor pin
22. Timing rod
23. Timing rod spring
24. Timing rod collar
25. Timing rod retaining ring
26. Firing pin
27. Firing pin retracting spring (blue color)
28. Ejector
29. Ejector spring pin
30. Ejector spring
31. Firing pin striker
32. Firing pin striker spring
33. Operating slide assembly
34. Mainspring
35. Guard
36. Recoil block screw
37. Stock stud screw
38. Guard screw escutcheon
39. Guard screw
40. Magazine lock pin
41. Magazine lock
42. Magazine lock spring
43. Magazine

Note: Buttplate, buttplate screws, and buttstock are not shown.







# WINCHESTER MODEL 88 RIFLE

By JAMES M. TRIGGS

**T**HE Winchester Model 88 hammerless lever-action rifle was introduced in 1955. In design, it represented a radical departure from that of previous Winchester lever-action rifles.

The high pressure levels of modern sporting cartridges dictated a secure breeching system which was provided in the Model 88 by a rotating bolt with triple locking lugs engaging the receiver close to the cartridge head. Other significant design features are its enclosed receiver, detachable box-magazine, one-piece stock, and side ejection port which permits mounting of scope sights directly over the bore.

The Model 88 is chambered for the .243, .308, and .358 Winchester.

## Parts Legend

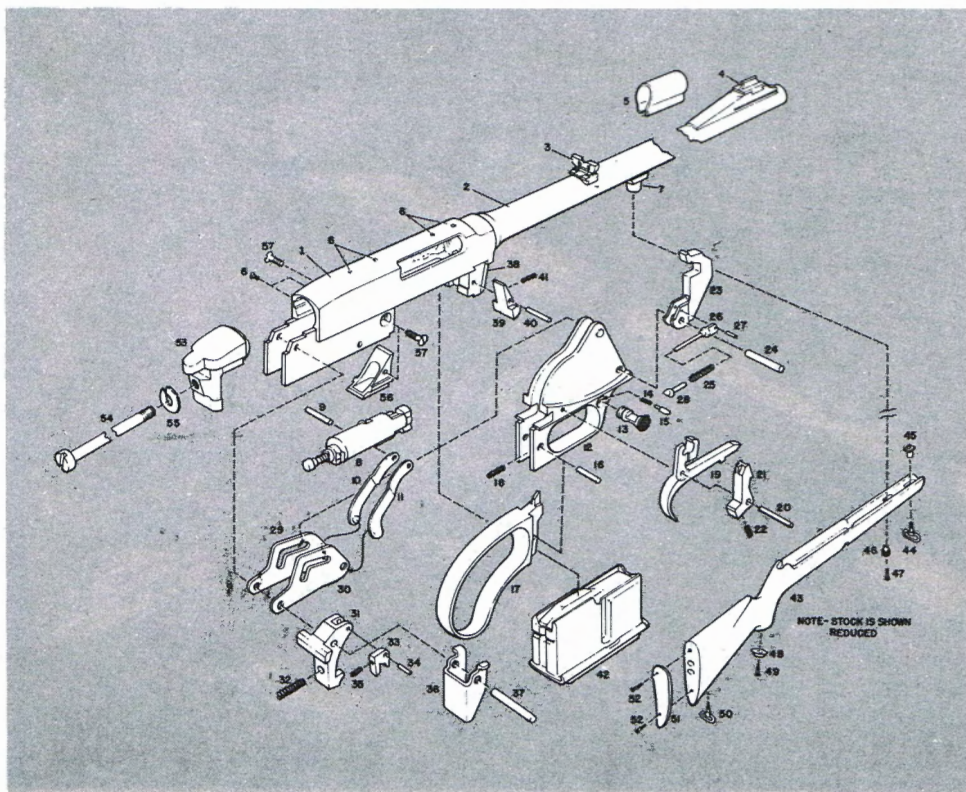
- |  |                                  |                                     |
|--|----------------------------------|-------------------------------------|
| 1. Receiver  | 19. Trigger                      | 38. Magazine lock housing           |
| 2. Barrel  | 20. Trigger pin                  | 39. Magazine lock                   |
| 3. Rear sight (Lyman 16A)                            | 21. Hammer lock                  | 40. Magazine lock pin               |
| 4. Front sight                                       | 22. Trigger spring               | 41. Magazine lock spring            |
| 5. Front sight cover                                 | 23. Hammer                       | 42. Magazine assembly               |
| 6. Front & rear mount base and sight plug screws (6) | 24. Hammer pin                   | 43. Stock                           |
| 7. Forearm stud                                      | 25. Hammer spring                | 44. Forearm swivel screw            |
| 8. Bolt assembly (See Fig. 1.)                       | 26. Hammer spring guide rod      | 45. Forearm swivel screw escutcheon |
| 9. Front link pin                                    | 27. Hammer spring guide rod pin  | 46. Forearm escutcheon              |
| 10. Front link, left                                 | 28. Hammer spring guide          | 47. Forearm screw                   |
| 11. Front link, right                                | 29. Rear link, left              | 48. Pistol grip cap                 |
| 12. Guard  | 30. Rear link, right             | 49. Pistol grip cap screw           |
| 13. Safety   | 31. Guard latch                  | 50. Stock swivel screw              |
| 14. Safety spring                                    | 32. Guard latch spring           | 51. Buttplate                       |
| 15. Safety spring plunger                            | 33. Hammer catch                 | 52. Buttplate screws                |
| 16. Finger lever pin                                 | 34. Hammer catch pin             | 53. Recoil block                    |
| 17. Finger lever                                     | 35. Hammer catch spring          | 54. Recoil block screw              |
| 18. Finger lever spring                              | 36. Guard latch, spring abutment | 55. Recoil block screw washer       |
|  | 37. Rear link pin                | 56. Receiver spacer                 |
|  |                                  | 57. Receiver spacer screw (2)       |

## Disassembly Procedure

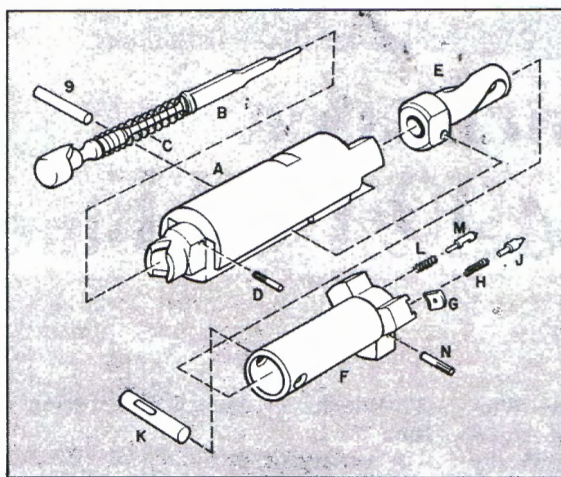
To disassemble rifle, remove magazine (42) and open action, checking chamber to be sure it is unloaded. Hold gun inverted with lever upward and remove forearm screw (47). Lift barrel and action out of stock, pivoting rear of receiver against recoil block (53). Recoil block may be removed from stock by removing buttplate (51) and unscrewing recoil block screw (54) through hole in butt.

Action is removed intact from receiver as shown in Fig. 2. Remove front ends of rear links from pins in ears of guard. Guard latch assembly (31, 32, 33, 34, 35, 37) is removed by drifting out slave pin used to replace rear link pin (37). Hammer (23) with spring (25) and associated hammer parts (26, 27, 28) are removed by drifting out slave pin used to replace hammer pin (24). Trigger (19) and hammer lock (21) with spring (22) are removed by drifting out trigger pin (20).

Safety (13) can be removed from guard (12) by rotating safety 90° in either direction and pushing it out, taking care not to allow compressed safety plunger spring (14) or plunger (15) to escape. Finger lever (17) is removed by drifting out finger lever pin (16), taking care not to lose compressed spring (18) in guard. Receiver spacer may be removed from receiver by unscrewing receiver spacer screws (57). Magazine lock (39) can be removed from housing (38) by drifting out pin (40), taking care not to lose spring (41).





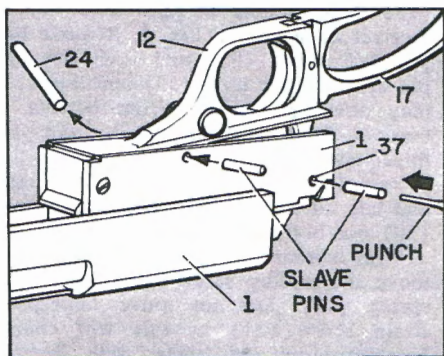


## Bolt Assembly

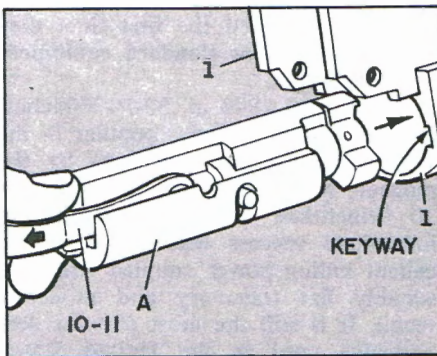
- A. Bolt sleeve
- B. Firing pin
- C. Firing pin spring
- D. Firing pin retaining pin
- E. Bolt sleeve lock
- F. Bolt
- G. Extractor
- H. Extractor spring
- J. Extractor plunger
- K. Bolt sleeve lock pin
- L. Ejector spring
- M. Ejector
- N. Ejector pin

**Fig. 1:** Bolt is removed from front links (10, 11) by removing front link pin (9). Drift out firing pin retaining pin (D), taking care not to force grooved end of pin through hole. Remove firing pin (B) and spring (C) to rear. Remove bolt sleeve cam lock pin (K) and bolt sleeve lock (E)

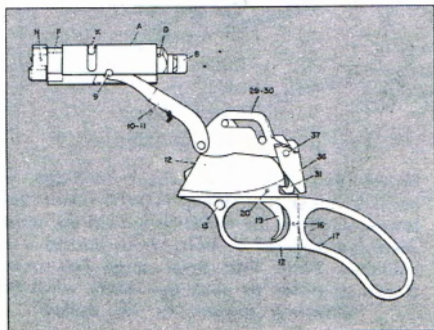
and bolt (F) from bolt sleeve (A). Extractor (G) can be removed by depressing point of plunger (J) with punch and sliding extractor inward and out of dovetail, into counterbore in face of bolt. Ejector (M) can be removed by drifting out ejector pin (N), grooved end first.



**Fig. 2:** To remove action from receiver, 2 slave pins, the same diameter as rear link pin (37) and hammer pin (24) and about  $\frac{3}{4}$ " long (distance between receiver side-plates), must be used. Tap out hammer pin and rear link pin using slave pins. Remove the action as a unit from the rear end of the receiver.



**Fig. 3:** To reassemble bolt in receiver, grasp 2 front links as shown until bolt sleeve lock pin (K) is near top of its slot (when gun is held inverted as shown). Insert bolt sleeve in bolt hole in rear of receiver. Pin should enter keyway in rear of receiver. Push bolt sleeve assembly into receiver, swinging links up vertically between receiver side-plates close to receiver spacer. Grasp guard assembly (12) with finger lever up and connect rear ends of front links (10, 11) to front end of rear links (29, 30), one at a time. Place guard in position in receiver.



**Fig. 4:** Showing relationship of all parts of action assembled. After replacing action in position in receiver, replace hammer pin (24) and rear link pin (37), drifting out slave pins that were used to hold action while it was out of receiver.

## A MAN TO REMEMBER

A. E. BURNSIDE

Born—Liberty, Ind.,  
May 23, 1824

Died—Bristol, R. I.,  
Sept. 13, 1881



**A**MBROSE EVERETT BURNSIDE was graduated from the U. S. Military Academy in 1847. He resigned his commission in 1853 and in 1855 organized the Bristol Fire Arms Co., of Bristol, R. I. In 1856 he patented a breech-loading rifle with a movable chamber loaded from the front with a cone-shaped cartridge with a metallic case. The rear of the case had a small hole covered by a thin material through which the powder was ignited by flame from a percussion cap.

In 1860 the Bristol Fire Arms Co. failed and was reorganized as the Burnside Arms Co. with factory at Providence, R. I. During the Civil War this company sold 55,000 Burnside carbines and 22 million Burnside cartridges to the Government. These arms were carried by some cavalry units as late as the middle 1870's. The company also made Spencer rifles and carbines.

When only 37 years of age Burnside organized the Rhode Island Volunteers for service in the Civil War. During the war Burnside rose to the rank of Major General of the U. S. Volunteers. His campaign along the Carolina coast with subsequent victories at Roanoke Island, New Bern, and Ft. Macon was one of the first military amphibious operations undertaken by the U. S. Army.

Later in the war Burnside was distinguished as an officer who was uncommonly devoted to the cause, and to the men in his command. He was known by his fellow officers as an amiable personality and a brave man.

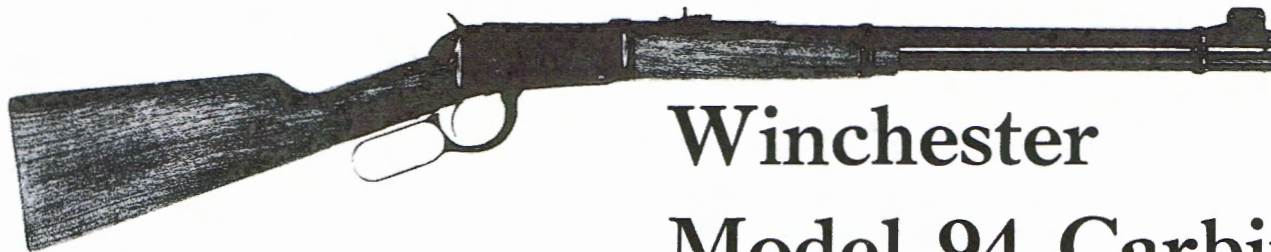
When President Lincoln bestowed upon Burnside the generalship of the Army of the Potomac he thrust upon the young general a command that was beyond his experience and organizational ability. This coupled with the fact that Burnside replaced Gen. McClellan, who was extremely popular with his troops, led to the unsuccessful attempt to storm the heights of Fredericksburg in 1862.

Later Burnside was instrumental in turning Morgan's Ohio raid and successfully withstood the Confederate Gen. Longstreet's siege of Knoxville.

In 1871 Burnside helped organize and served as the first President of the National Rifle Association of America.

Burnside was Governor of Rhode Island from 1866 to 1869, and was a Rhode Island Republican in the U. S. Congress from 1875 until his death in 1881.—GRAHAM BURNSIDE.



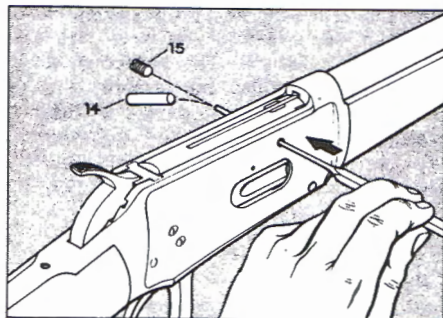


# Winchester Model 94 Carbine

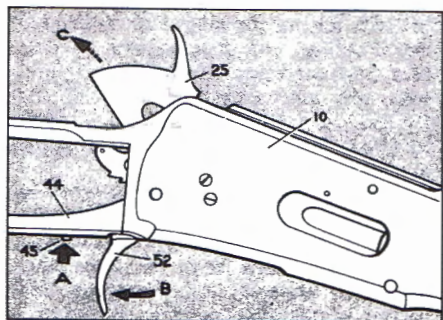
By James M. Triggs

WITH only a few minor changes, Winchester Model 1894 rifles and carbines have been in continuous production for over 60 years. Some idea of the number produced may be gained from the fact that Model 1894 rifle serial number 1,000,000 was presented to President Calvin Coolidge in 1927, with President Harry S. Truman receiving rifle No. 1,500,000 in 1948 and President Dwight D. Eisenhower rifle No. 2,000,000 in 1953.

JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.



**1** Unscrew finger lever pin stop screw (15) and remove from left side of receiver. Drift out finger lever pin (14) as shown with a small punch inserted in hole provided for this purpose in right-hand side of receiver. Remove link pin screw (35) from link and drift out link pin (34) from either side. Draw out and disengage link from trunnion in lower end of locking bolt (40). (Rifle should be held in vise with padded jaws)



**2** Remove mainspring screw and mainspring. Remove hammer screw. While pressing upward on safety catch (45) as shown at "A", pull back on trigger "B" and pull hammer (25) upward and backward out of receiver as shown at "C". Reverse this procedure when reinstalling hammer

A significant fact is that the Winchester Model 1894 was the first American rifle of sporting type specifically constructed for smokeless powder cartridges. Like many successful Winchester firearms, it was designed by the famed firearm inventor John M. Browning who sold the patent to Winchester. Initial rifles were offered in .32-40 and .38-55 Winchester blackpowder calibers as a satisfactory smokeless powder was not yet available. In early spring of 1895 Winchester did offer the Model 1894 chambered for the new .30-30 and .25-35 Winchester smokeless powder cartridges. Barrels were of nickel steel. This marked the first time they had been listed as standard equipment by Winchester.

The Model 1894 in .30-30 Winchester caliber soon became popular in the West where it was preferred by the pioneer, hunter and rancher. The .30-30 Winchester cartridge was also an immediate success because of its excellent killing power coupled with reasonably flat trajectory and moderate recoil. It is still the most popular deer cartridge used in the United States. The Model 1894 was first offered in

.32 Winchester Special chambering in June 1902.

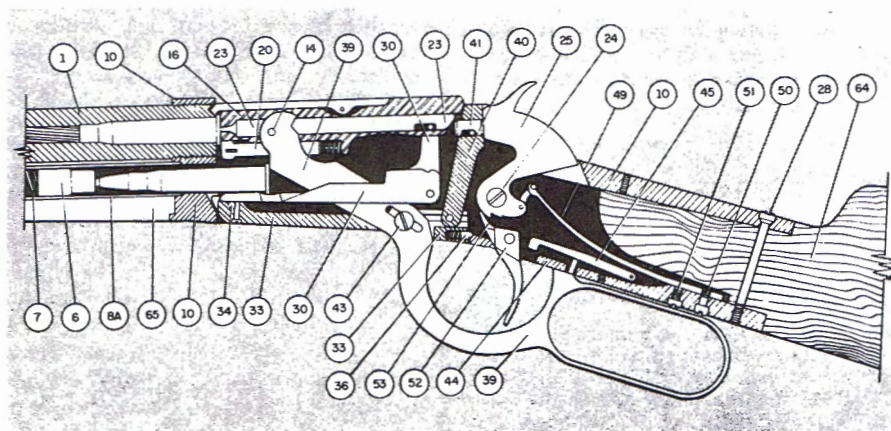
A variety of carbines and rifles, including takedown models, have been manufactured since the Model 1894 was first introduced. Currently it is available in carbine version only, in .30 Winchester (.30-30) and .32 Winchester Special calibers.

## DISASSEMBLY PROCEDURE

Unscrew upper tang screw (28) and remove buttstock. Remove finger lever pin stop screw (15) from left-hand side of receiver and drift out finger lever pin (14) through hole at right-hand side of receiver as shown in Fig. 1. Remove link pin stop screw (35) and drift out link pin (34). Finger lever (39) and link (33) may now be removed from bottom of receiver. Separate these parts by removing finger lever link screw (43).

Remove carrier screws (29) from right and left sides of receiver and drop carrier (30) out bottom of receiver.

With hammer let all the way down, remove mainspring screw (50) and mainspring (49). Do not move mainspring strain screw (51) as this will change hammer blow and trigger pull. Remove hammer screw (24) and, while holding



**3** This sectional drawing shows the Model 94 action closed and locked after firing. When lever (39) is pulled down, link (33) drops down, allowing the next cartridge to be moved back onto carrier (30) by the magazine spring (7). Dropping the lever also lowers the locking bolt (40) and firing pin striker (41), and draws back

breech bolt (16), ejects spent cartridge, and cocks hammer (25). When lever is almost to its lowest position, the carrier is moved up, placing cartridge in front of bolt, which carries it into chamber. Note that lever must be securely closed in order to push up safety catch (45), allowing trigger to be pulled



safety catch (45) up, pull back on trigger and remove hammer as shown in Fig. 2. Drive out lower tang (44) toward rear of receiver using a brass rod or wood mallet. Locking bolt (40) and breech bolt (16) may now be removed from receiver.

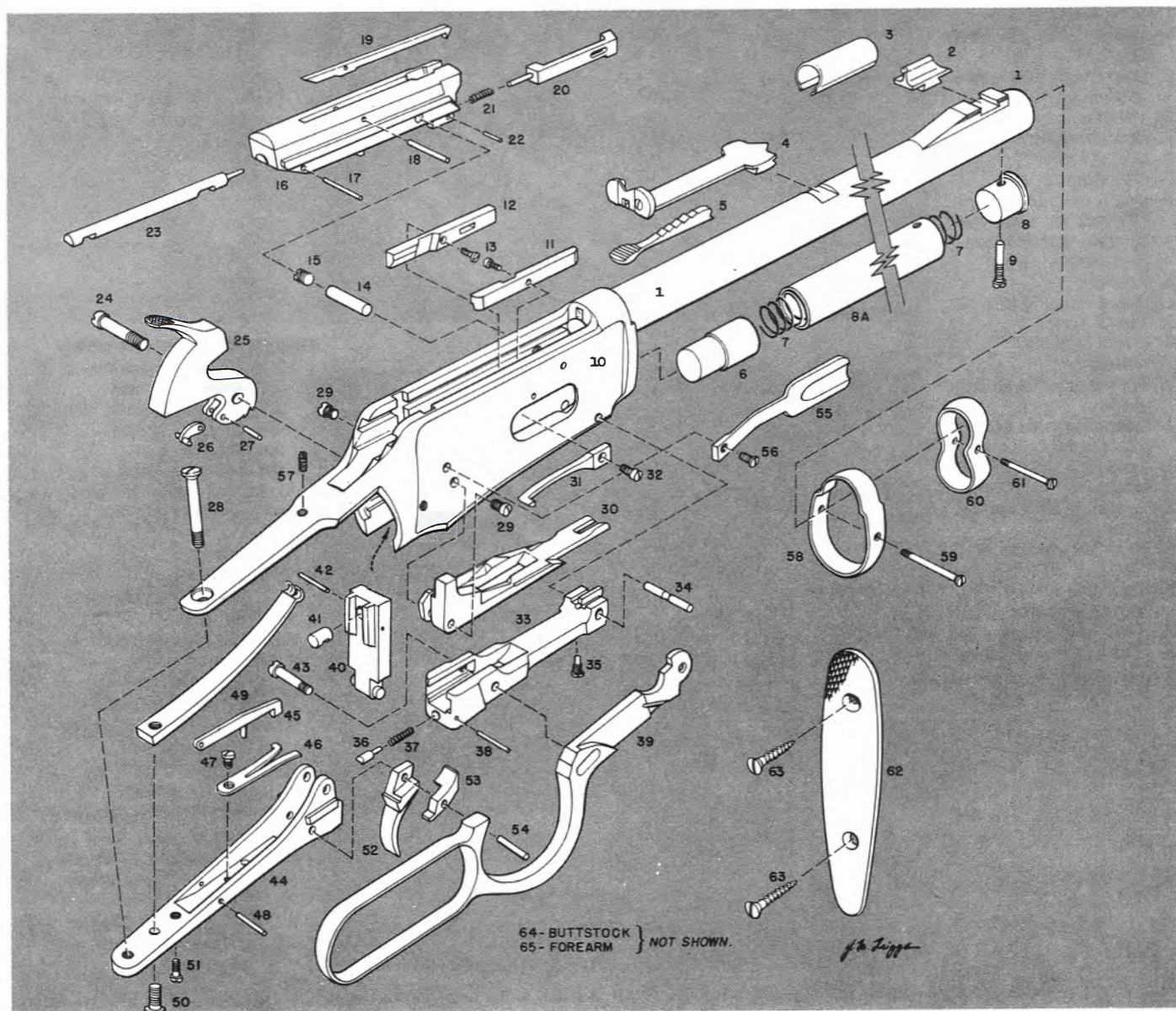
Remove spring cover screw (56) from right side of receiver and remove spring cover (55). Remove carrier spring screw (32) and carrier spring (31) from receiver. Removal of cartridge guides (11 & 12) is not recommended since poorly installed guides will result in improper feeding. The services of a gunsmith should be employed in repair or replacement of these parts. The cartridge guides can be easily cleaned while in place with in receiver.

While not necessary for normal cleaning purposes, magazine assembly is easily removed. Remove magazine plug screw (9) and magazine plug (8) from front of magazine tube (8A). Withdraw the magazine spring (7) and follower (6) from front of magazine tube. Remove front and rear band screws (59 & 61). Slide forearm (65) and rear band up on barrel and loosen rear band from forearm. Pull magazine tube free of receiver and withdraw to front.

1. Barrel with ramp
2. Front sight
3. Front sight cover
4. Rear sight
5. Rear sight elevator
6. Magazine follower
7. Magazine spring
- 8A. Magazine tube
8. Magazine plug
9. Magazine plug screw
10. Receiver
11. Cartridge guide, right hand
12. Cartridge guide, left hand
13. Cartridge guide screws (2)
14. Finger lever pin
15. Finger lever pin stop screw
16. Breech bolt
17. Firing pin stop pin
18. Extractor pin
19. Extractor
20. Ejector
21. Ejector spring
22. Ejector stop pin
23. Firing pin
24. Hammer screw
25. Hammer
26. Hammer stirrup
27. Hammer stirrup pin
28. Upper tang screw
29. Carrier screws (2)
30. Carrier
31. Carrier spring
32. Carrier spring screw

## PARTS LEGEND

33. Link
34. Link pin
35. Link pin stop screw
36. Friction stud
37. Friction stud spring
38. Friction stud stop pin
39. Finger lever
40. Locking bolt
41. Firing pin striker
42. Firing pin striker stop pin
43. Finger lever link screw
44. Lower tang
45. Safety catch
46. Sear and safety catch spring
47. Sear and safety catch spring screw
48. Safety catch pin
49. Mainspring
50. Mainspring screw
51. Mainspring strain screw
52. Trigger
53. Sear
54. Sear pin
55. Spring cover
56. Spring cover screw
57. Peep sight plug screw
58. Rear band
59. Rear band screw
60. Front band
61. Front band screw
62. Buttplate
63. Buttplate screws (2)
64. Buttstock (not shown)
65. Forearm (not shown)





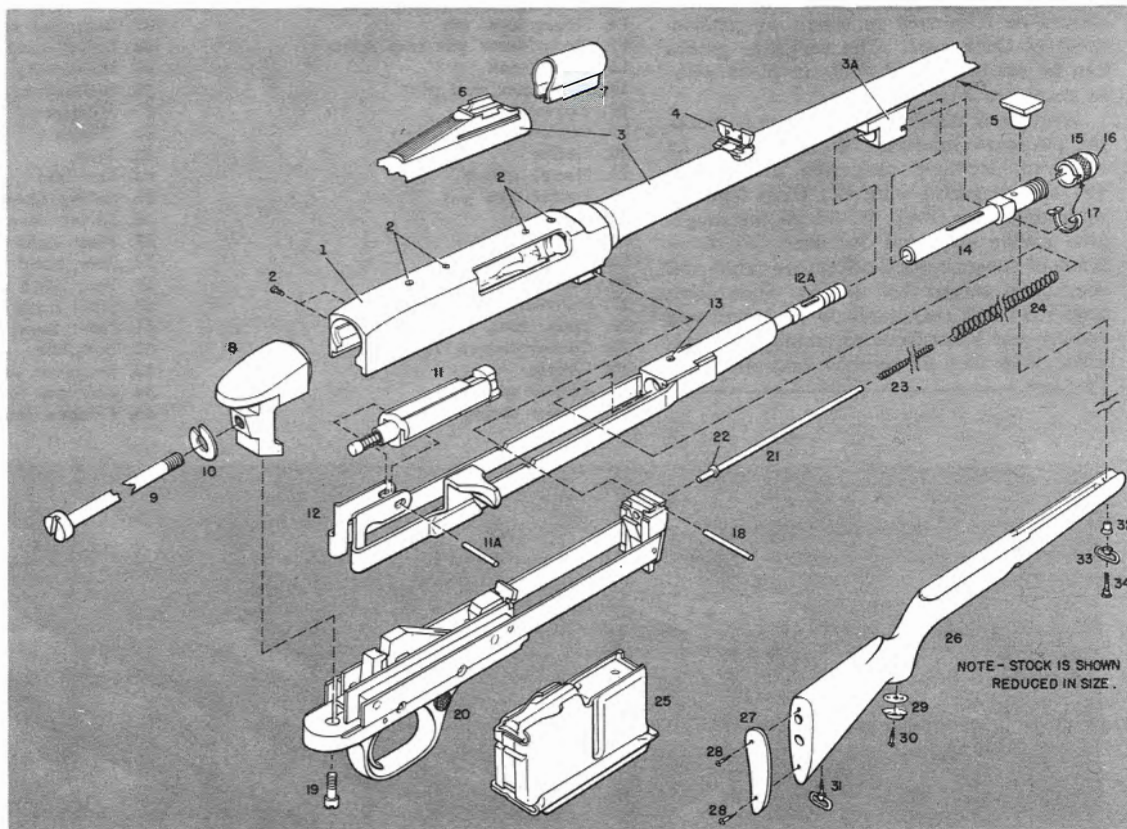


# WINCHESTER MODEL 100 RIFLE

By JAMES M. TRIGGS

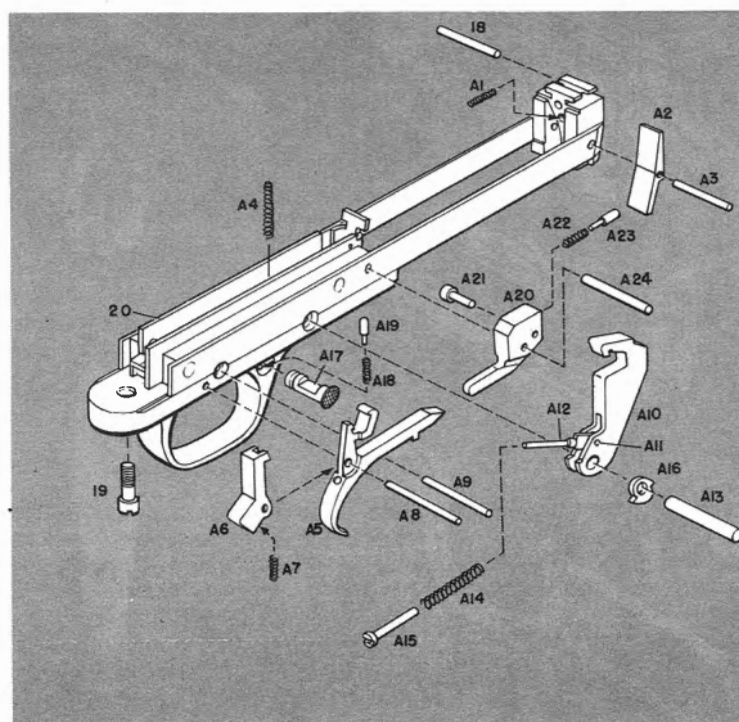
## Parts Legend

1. Receiver
2. Telescope and metallic sight base screws (6)
3. Barrel
- 3A. Gas cylinder housing (integral with barrel)
4. Rear sight, Lyman 16A
5. Forearm stud
6. Front sight
7. Front sight cover
8. Recoil block
9. Recoil block screw
10. Recoil block screw washer
11. Bolt assembly, complete (see Fig. 1.)
- 11A. Bolt sleeve pin (see Fig. 1.)
12. Operating slide guide assembly
- 12A. Piston
13. Operating slide pin
14. Gas cylinder
15. Gas cylinder cap
16. Gas cylinder plug (Staked to cap. Removal not recommended.)
17. Retainer
18. Guard housing pin
19. Guard screw
20. Guard housing assembly
21. Operating slide spring guide
22. Operating slide spring guide ring
23. Operating slide spring, inner
24. Operating slide spring, outer
25. Magazine assembly
26. Stock
27. Buttplate
28. Buttplate screws (2)
29. Pistol grip cap & key
30. Pistol grip cap screw
31. Stock swivel
32. Forearm bushing
33. Forearm swivel
34. Forearm screw



NOTE - STOCK IS SHOWN  
REDUCED IN SIZE.

## Guard Housing Assembly

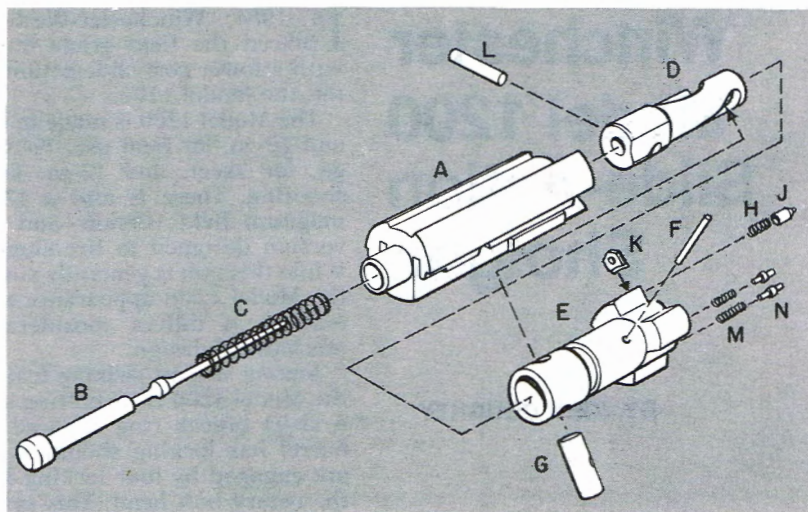


- A1. Magazine lock spring
- A2. Magazine lock
- A3. Magazine lock pin
- A4. Trigger spring
- A5. Trigger
- A6. Hammer lock
- A7. Hammer lock spring
- A8. Trigger pin
- A9. Hammer spring guide pin
- A10. Hammer
- A11. Hammer spring guide rod pin
- A12. Hammer spring guide rod
- A13. Hammer pin
- A14. Hammer spring
- A15. Hammerspring guide
- A16. Trigger lock
- A17. Safety
- A18. Safety spring
- A19. Safety spring plunger
- A20. Trigger lock lever
- A21. Trigger lock lever pin
- A22. Trigger lock plunger spring
- A23. Trigger lock plunger
- A24. Trigger lock lever pivot pin



## Bolt Assembly

- A. Bolt sleeve
- B. Firing pin
- C. Firing pin spring
- D. Bolt sleeve lock
- E. Bolt
- F. Ejector pin
- G. Bolt sleeve lock pin
- H. Extractor spring
- J. Extractor plunger
- K. Extractor
- L. Bolt sleeve pin
- M. Ejector springs (2)
- N. Ejectors (2)

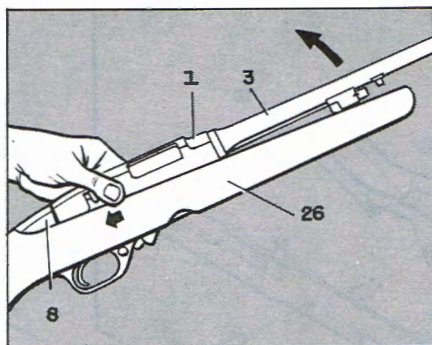


**T**HE Winchester Model 100 semi-automatic rifle was introduced in 1960 in cal. .308 Winchester. This rifle is gas-operated and has a detachable box magazine. The rotating bolt has 3 large locking lugs. Ejection of fired cases is to the right.

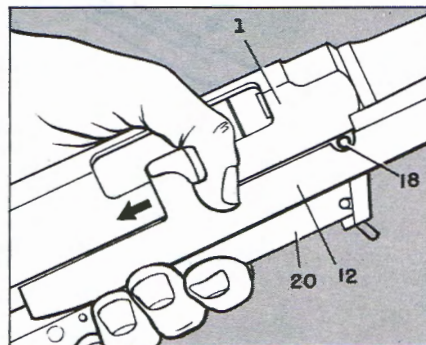
The gas system of the Model 100 resembles that of the M14 Service rifle in that it has an expansion chamber which allows a gradual build-up and expansion of gas against the piston. This gives a smoother push to the operating parts than would be the case if the gas acted directly upon a flat piston head as in the M1 Service rifle. No adjustment of the gas system is required when changing from one commercial loading to another and this rifle will function well with handloaded ammunition of adequate power.

By virtue of its relatively short 22" barrel and good balance, the Winchester Model 100 is noted for its excellent handling qualities.

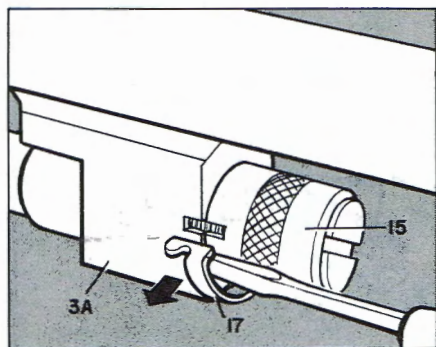
**1** To disassemble bolt assembly after removing bolt sleeve pin (L) and withdrawing bolt assembly from operating slide guide assembly, withdraw firing pin (B) and spring (C) from bolt sleeve (A) to rear. Draw bolt (E) and bolt sleeve lock (D) forward out of sleeve. Drift out bolt sleeve lock pin (G) and pull bolt forward out of lock (D). Reassemble in reverse. (See Fig. 5).



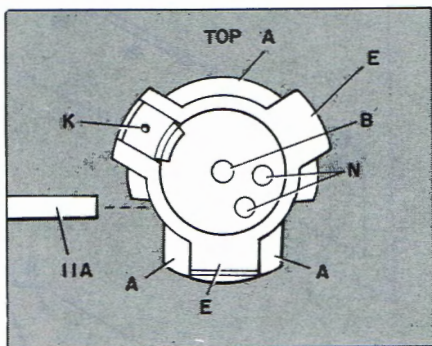
**2** To separate action from stock (26), remove magazine assembly (25), unscrew forearm swivel screw (34) and guard screw (19). Pull cocking lever all the way back and hold in this position. Grasp forearm and push barrel up, pivoting rear of receiver against recoil block (8) and lift action up out of stock.



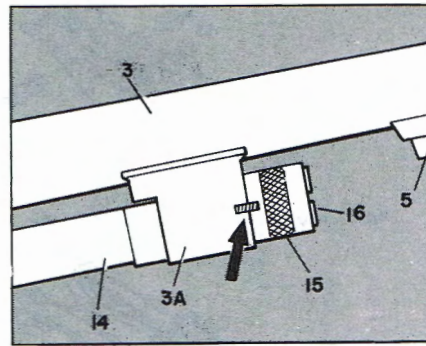
**3** Remove trigger guard (20) by pulling cocking handle back until "U"-shaped notch in slide arm lines up with guard housing pin (18) in receiver as shown here. Drift out pin and draw guard from receiver to rear with operating slide spring guide and springs (21, 23, 24).



**4** Remove retainer (17) using tip of screwdriver as shown. Unscrew gas cylinder cap (15) and pull operating slide guide assembly (12) to rear. Draw gas cylinder (14) forward off piston (12A). Slide guide assembly (12) with bolt assembly (11) can be drawn off receiver to rear. Remove the bolt from slide by drifting out bolt-sleeve pin (11A).



**5** If bolt has been disassembled, take care in reassembling that bolt (E) is replaced in sleeve (A) in proper position as shown by this front view. Replace the pin (11A) through the slide guide assembly (12) and the bolt sleeve lock (D).



**6** When replacing gas cylinder cap (15) screw back on cylinder (14) and tighten. Then loosen cap only sufficiently to line up notches in cap and gas cylinder housing (3A) as shown by arrow. Replace retainer (17), reversing procedure followed in Fig. 4.



# Winchester Model 1200 Slide-Action Shotgun

BY JOHN DOUGHTY

IN 1964, Winchester-Western replaced the field grade Model 12 with a lower cost slide-action repeater, the Model 1200.

The Model 1200 is made in 12-, 16- and 20-ga. for field use, 12- and 20-ga. for skeet, and 12-ga. for trap shooting. There is also a 12-ga. 3" magnum field version, and a deer version designed to fire slug loads. While this gun is generally similar to the Model 12 in appearance and operation, it differs considerably in mechanical design.

Among several striking features of the Model 1200 is its bolting system. A short breech ring screwed to the barrel has locking shoulders which are engaged by four locking lugs on the rotary bolt head. This system is

extremely strong.

Another important feature is a disconnecter which makes it necessary to release the trigger before pulling it for another shot. This is desirable for safety reasons. There is no inertia slide release. This device in the Model 12 requires that the slide be pushed forward slightly before opening the gun without firing. It is intended to prevent premature opening of the action in the event of a hangfire, but is not necessary with today's reliable ammunition.

Dual action slide bars extend from the action slide handle to the breechblock and prevent any tendency to bind. The takedown system is simple, and permits easy removal of the barrel.



WINCHESTER MODEL 1200  
SLIDE ACTION SHOTGUN

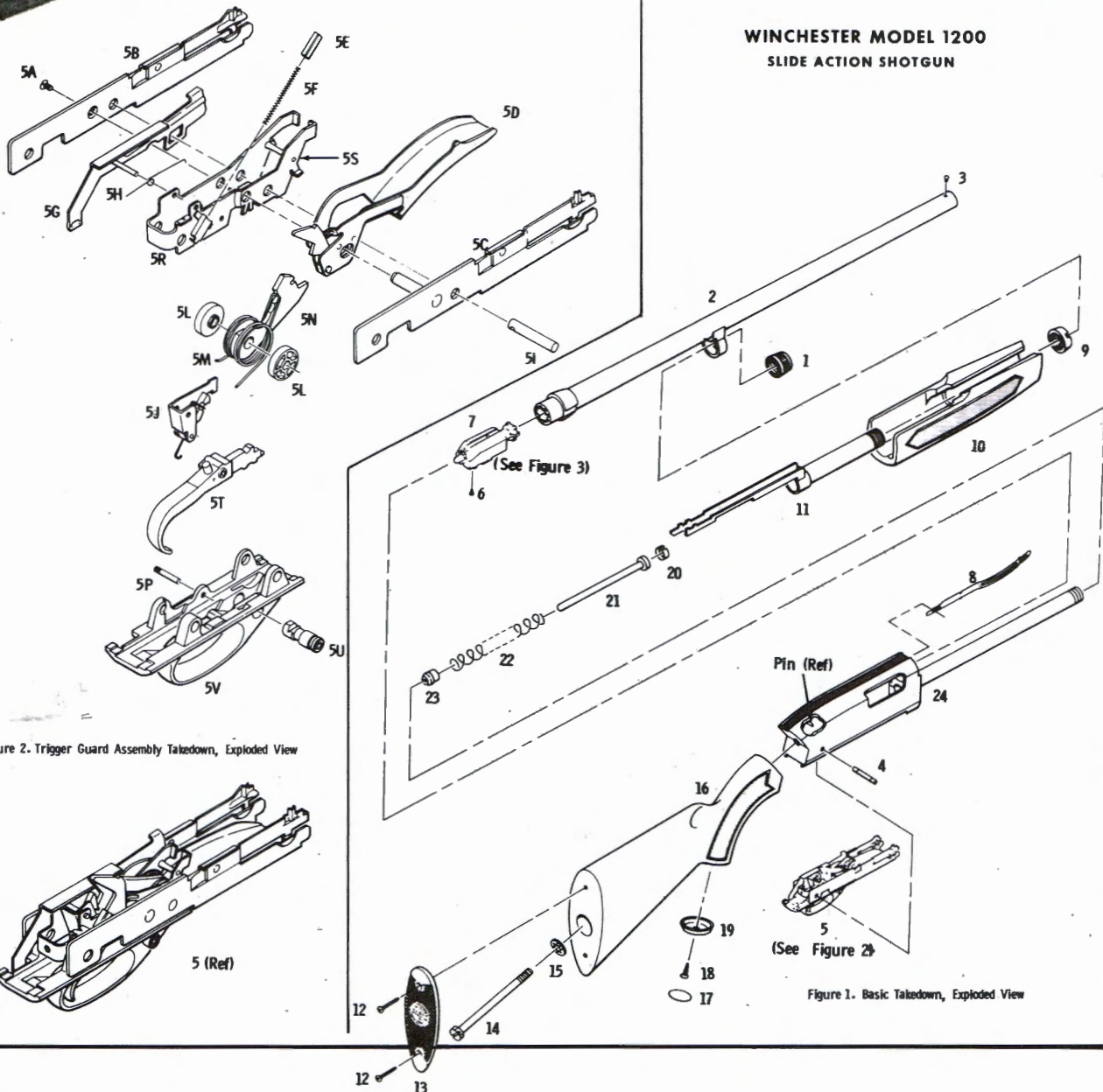


Figure 2. Trigger Guard Assembly Takedown, Exploded View

Figure 1. Basic Takedown, Exploded View



## Disassembly Instructions

Step 1—Depress disconnecter (5G) and pull forearm back to unlock and open action. Inspect chamber, carrier and magazine follower to ascertain that gun is not loaded. Close action and engage safety (5U).

Step 2—Unscrew magazine cap (1).

Step 3—Pull barrel assembly (2) from receiver.

Step 4—Position gun with trigger pointing up and punch out trigger guard pin (4) from left to right. Lift up on trigger guard assembly (5) and withdraw from receiver. For trigger guard assembly takedown procedure see Figure 2.

Step 5—Remove slide arm bridge screw (6). Remove ejector (8) by using thin bladed knife to lift it off the retaining pin on inside of receiver and pulling it out the front of the receiver.

Step 6—Slide forearm forward until bolt assembly (7) exits the front of the receiver and can be lifted from slide arm extension. For bolt assembly takedown procedure see Figure 3.

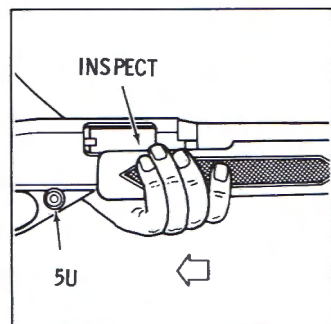
After disassembly steps 1 thru 6 have been completed, pull forearm/slidearm/extension group off the end of the magazine tube and use a spanner wrench to remove slide arm extension cap (9). Pull forearm (10) off the slide arm extension (11). Remove buttplate screws (12) and lift off buttplate (13). Use thin walled socket (1/2" nut outside flat dimension) or suitable screwdriver to remove buttstock bolt (14), buttstock washer (15) and buttstock (16). Caution. If a screwdriver is used be sure blade is properly engaging slot in stockbolt before applying pressure or the buttstock may be damaged. If removal of the grip cap is desired use thin bladed knife to pry up grip cap insert (17), unscrew grip cap screw (18) and remove grip cap (19). To remove magazine tube components, insert a suitable screwdriver into the end of the magazine tube and pry out the magazine tube plug (20) and withdraw plug (21), magazine spring (22), and magazine follower (23). Further disassembly should not be attempted.

Trigger guard assembly takedown—Figure 2

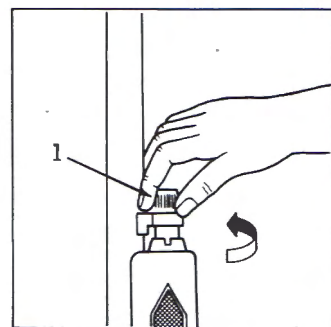
Remove trigger stop pin screw (5A) and pull off left slide arm support assembly (5B). While restraining carrier use a suitable punch to push out the right slide arm support assembly (5C), remove carrier (5D), carrier pawl plunger (5E), and carrier spring (5F). Disengage safety and ease down hammer while depressing trigger. Rotate disconnecter to remove tension on disconnecter spring, restrain the sear bracket assembly, pull out the disconnecter (5G) and remove disconnecter spring (5H) and sear bracket assembly (5J). Use a suitable punch

to drive out the hammer pin (5K) from left to right and lift out and disassemble the grouping consisting of: two hammer spring supports (5L), hammer spring (5M), and hammer (5N). Pull out knurled trigger stop pin (5P) from right to left and lift off hammer housing (5R). If desired hammer support pin (5S) can be removed by spreading housing slightly. Remove trigger assembly (5T) and safety (5U) from trigger guard (5V). Bolt assembly takedown procedure—Figure 3

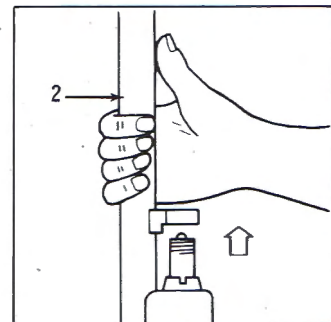
Compress firing pin and spring slightly and lift off slide arm bridge (7A), remove firing pin (7B) and firing pin spring (7C). Rotate bolt so that hole in bolt slide is directly over the top of the cam pin. Insert a punch into bolt slide hole and drive out cam pin (7D). Place rear end of bolt slide on flat surface and remove punch. Remove bolt (7E), extractor (7F), extractor spring (7G), and extractor collar (7H) from bolt slide (7J). To reassemble reverse sequence.



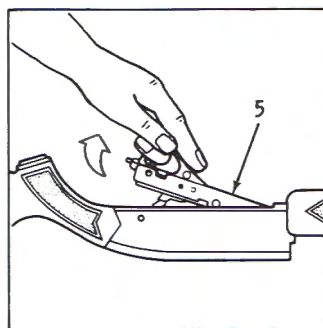
- STEP 1 -



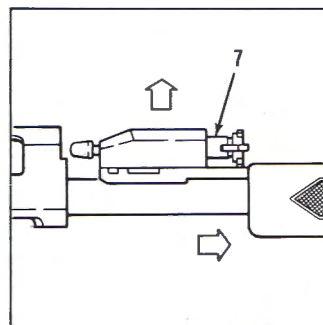
- STEP 2 -



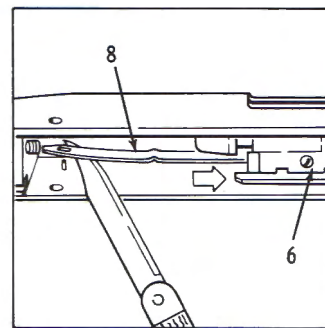
- STEP 3 -



- STEP 4 -



- STEP 6 -



- STEP 5 -

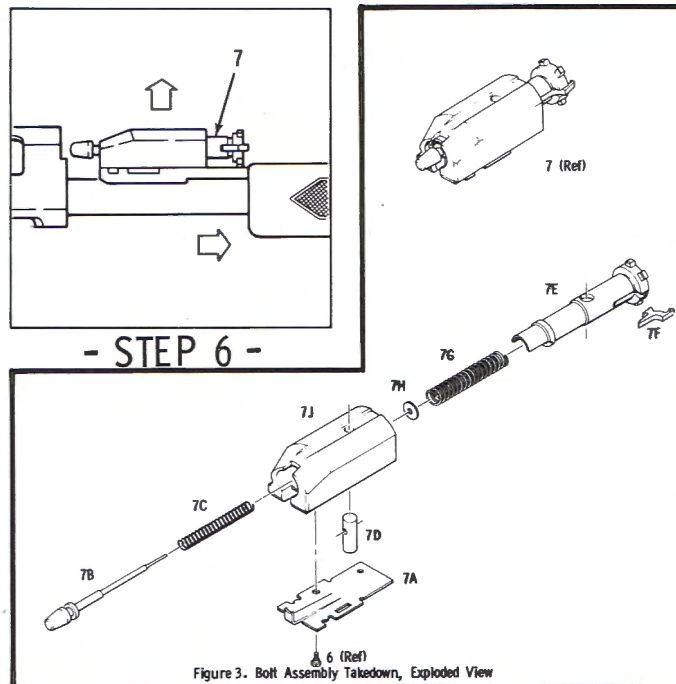


Figure 3. Bolt Assembly Takedown, Exploded View

## MODEL 1200 WINCHESTER Slide Action Shotgun

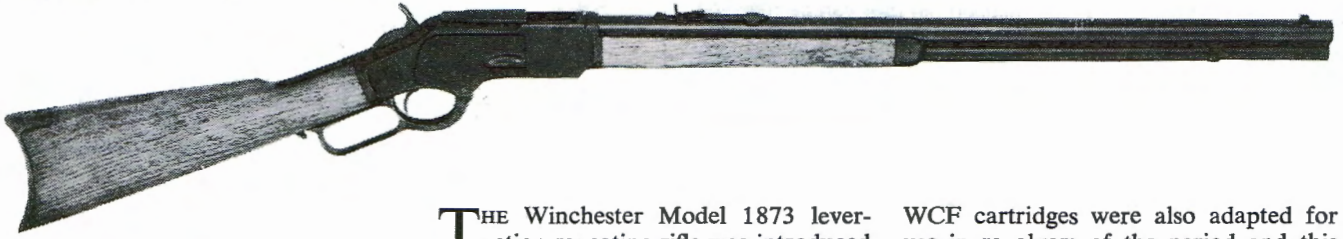
### PARTS LIST

Number	Description	Number	Description
1	Magazine cap	7	Bolt assembly
2	Barrel assembly	7A	Slide arm bridge
3	Front sight	7B	Firing pin
4	Trigger guard pin	7C	Firing pin spring
5	Trigger guard assembly	7D	Cam pin
5A	Trigger stop pin screw	7E	Bolt
5B	Left slide arm support assembly	7F	Extractor
5C	Right slide arm support assembly	7G	Extractor spring
5D	Carrier	7H	Firing pin collar
5E	Carrier pawl plunger	7J	Bolt slide
5F	Carrier spring	8	Ejector
5G	Disconnecter	9	Slide arm extension cap
5H	Disconnecter spring	10	Forearm
5J	Sear bracket assembly	11	Slide arm extension
5K	Hammer pin	12	Buttplate screws (2)
5L	Hammer spring supports	13	Buttplate
5M	Hammer spring	14	Buttstock bolt
5N	Hammer	15	Buttstock washer
5P	Trigger pin	16	Buttstock
5R	Hammer housing	17	Grip cap insert
5S	Hammer stop pin	18	Grip cap screw
5T	Trigger assembly	19	Grip cap
5U	Safety	20	Retaining ring
5V	Trigger guard	21	Magazine plug
6	Slide arm bridge screw	22	Magazine spring
		23	Magazine follower
		24	Receiver assembly



# Winchester Model 1873

By JAMES M. TRIGGS



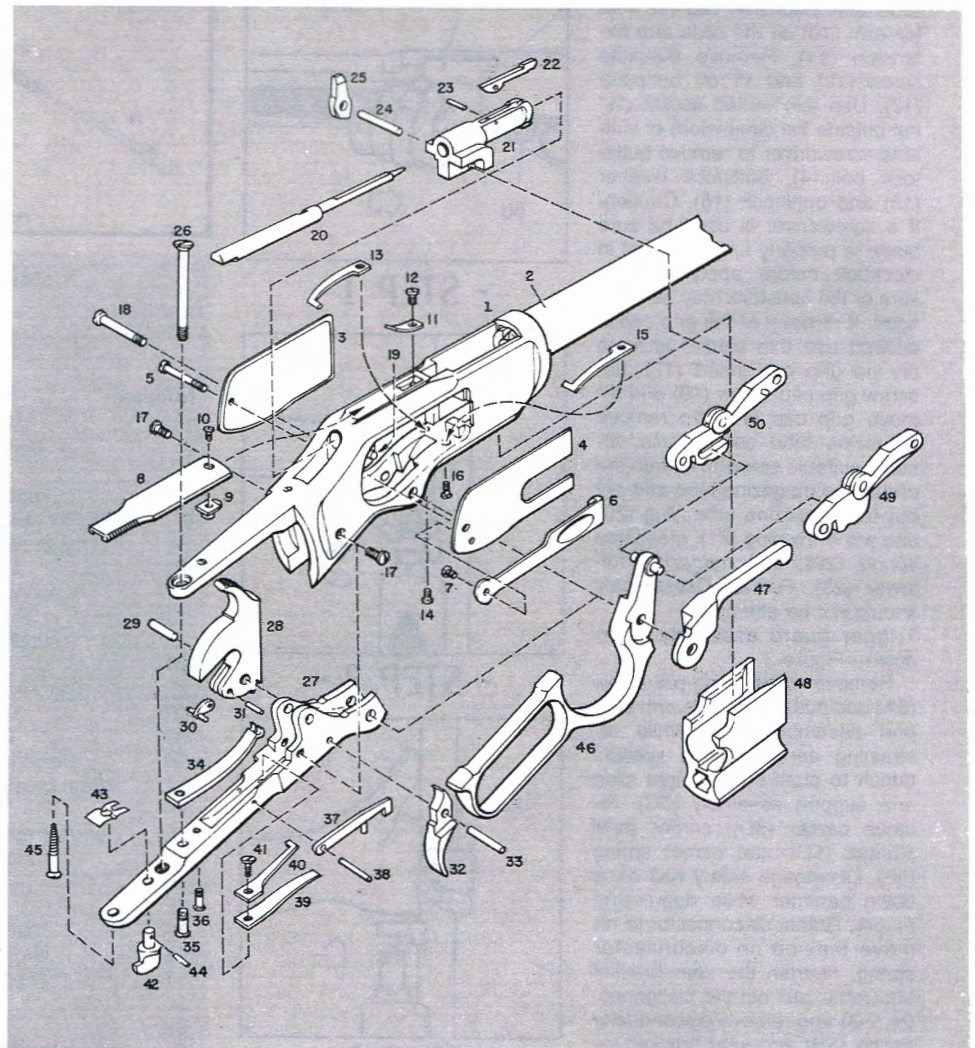
## PARTS LEGEND

1. Receiver
2. Barrel
3. Side plate, left
4. Side plate, right
5. Side plate screw
6. Spring cover
7. Spring cover screw
8. Mortise cover (dust cover)
9. Mortise cover stop
10. Mortise cover stop screw
11. Mortise cover spring
12. Mortise cover spring screw
13. Finger lever spring
14. Finger lever spring screw
15. Carrier lever spring
16. Carrier lever spring screw
17. Side tang screws (2)
18. Finger lever screw
19. Rear link pin
20. Breech pin piston (firing pin)
21. Breech pin base
22. Extractor
23. Extractor pin
24. Front link pin
25. Firing pin retractor
26. Upper tang screw
27. Lower tang
28. Hammer
29. Hammer pivot pin
30. Stirrup
31. Stirrup pin
32. Trigger
33. Trigger pivot pin
34. Mainspring
35. Mainspring screw
36. Mainspring tension screw
37. Safety catch
38. Safety catch pin
39. Trigger spring
40. Safety catch spring
41. Trigger & safety catch spring screw
42. Lever latch
43. Lever latch spring
44. Lever latch pin
45. Lower tang screw
46. Finger lever
47. Carrier lever
48. Carrier block
49. Link assembly, right
50. Link assembly, left

THE Winchester Model 1873 lever-action repeating rifle was introduced in 1873 and was first offered in cal. .44-40 Winchester (.44 WCF). The cal. .38-40 Winchester (.38 WCF) chambering was first offered in 1879, followed by the .32-20 (.32 WCF) in 1882. All of these cartridges were loaded with blackpowder as Winchester did not introduce a smokeless powder cartridge until 1894. The cals. .44, .38, and .32

WCF cartridges were also adapted for use in revolvers of the period and this dual purpose utility enhanced their popularity on the frontier.

In 1884 the Model 1873 rifle was offered in cals. .22 short and .22 long rimfire and with a takedown system in which a removable tapered pin secured the frame and stock assembly to the barrel assembly. This system proved unsatisfactory and was later changed to





the threaded-shank system used on center-fire rifles of this model. A few Model 1873 rifles were chambered on special order for the cal. .22 extra long rimfire.

The Model 1873 was the first repeating rifle made in this country for the .22 rimfire cartridge and was the first rifle made by Winchester for a center-fire cartridge. The receivers were made originally of forged iron, later changed to steel. Standard barrel lengths were 20", 24", and 30", but other barrel lengths were available on special order.

The Model 1873 was an eminently successful rifle and especially on the frontier. It did much to establish the prestige of the Winchester firm and remained in production until 1919.

## Barrel and Buttstock Assembly

- |                         |                         |                                  |
|-------------------------|-------------------------|----------------------------------|
| 2. Barrel               | 57. Magazine tube       | 64. Fore-end tip screws (2)      |
| 51. Rear sight          | 58. Magazine plug       | 65. Buttstock (wood)             |
| 52. Rear sight elevator | 59. Magazine plug screw | 66. Buttplate                    |
| 53. Front sight         | 60. Magazine spring     | 67. Buttplate screws (2)         |
| 54. Forearm tip tenon   | 61. Magazine follower   | 68. Buttplate slide              |
| 55. Magazine ring       | 62. Fore-end (wood)     | 69. Buttplate slide spring       |
| 56. Magazine ring pin   | 63. Fore-end tip        | 70. Buttplate slide spring screw |

## Disassembly Procedure

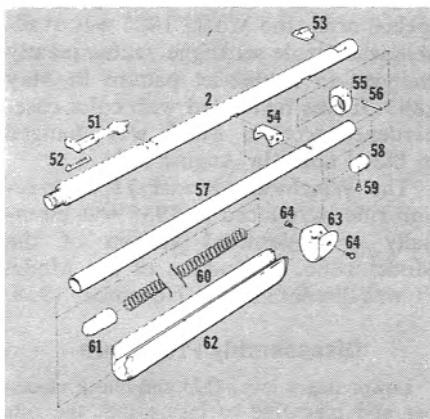
Open the rifle action to be sure chamber, carrier block, and magazine are unloaded. With magazine assembly and buttstock removed as outlined in Figs. 1 and 2 proceed as follows:

Remove side plate screw (5) and remove right and left hand side plates (3 & 4) from sides of receiver (1). Lift right and left link assemblies (49 & 50) off link pins (19 & 24) and out of receiver. Drift out front link pin (24) and remove firing pin retractor (25) from underside of breech pin base (21). With hammer at full cock, breech pin piston (firing pin, 20) may be drawn to rear out of breech pin base (21) and out of receiver (1). Remove breech pin base from receiver. Remove finger lever spring screw (14) and carrier lever spring screw (16) from underside of receiver and remove finger lever spring (13) and carrier lever spring (15) from receiver.

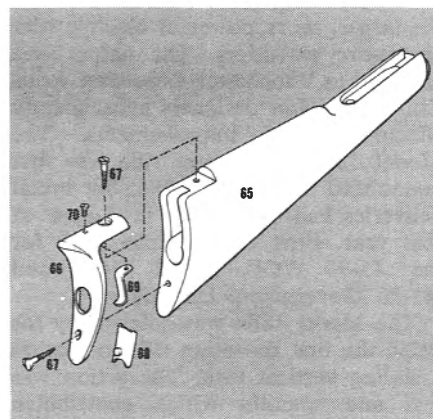
Place hammer in fired position and unscrew finger lever screw (18) and 2 side tang screws (17). Pull rear end of lower tang (27) downward and remove tang from underside of receiver along with finger lever (46) and carrier lever (47). Note that forward end of carrier lever fits into slot through bottom portion of carrier block (48). Drop carrier block out bottom of receiver.

Lower tang parts, hammer (28), main-spring (34), safety catch (37), etc., are easily disassembled by drifting out respective pivot pins and removing screws which retain springs. Mortise cover is removed by removing mortise cover stop screw (10) and sliding cover rearward and separating it from mortise cover stop (9).

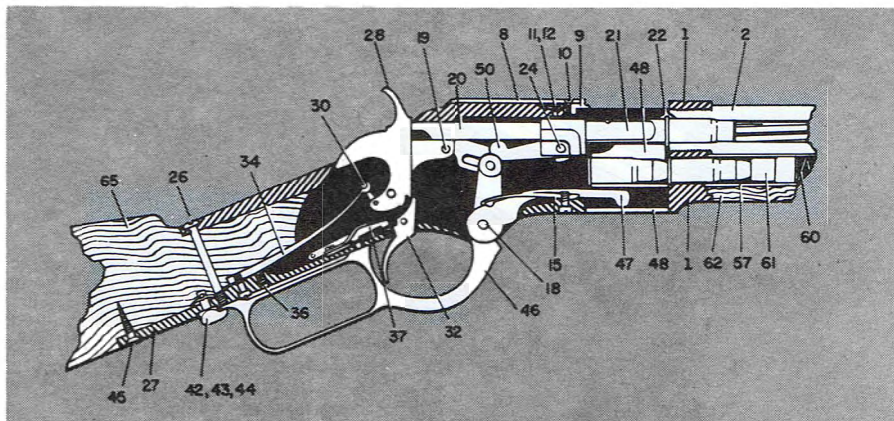
Reassembly is accomplished in reverse. When replacing assembled lower tang (27) keep hammer (28) in full forward position and place carrier lever (47) inside receiver with its front end in place in slot in carrier block (48). Assemble the tang with finger lever (46) in place into bottom of the receiver.



**1** To disassemble magazine assembly from barrel, remove magazine plug screw (59) and magazine plug (58). Withdraw magazine spring (60) and follower (61) from magazine tube to front. Drift out magazine ring pin (56) and draw magazine tube (57) out of receiver and fore-end to front. Remove 2 fore-end tip screws (64) and remove fore-end tip. Remove forearm tip tenon (54) and fore-end (62). Reassemble in reverse.



**2** To remove buttstock assembly from receiver, remove upper tang screw (26) and lower tang screw (45). Pull buttstock off rear of receiver. Buttplate is removed by unscrewing buttplate screws (67). Buttplate slide (68) is removed by unscrewing buttplate slide spring screw (70) and removing spring (69). Reassemble in reverse.



**3** This longitudinal section through the rifle shows all parts of the action in proper relationship. The rifle is shown here just after firing with an empty cartridge in the chamber and next cartridge ready in carrier block (48). Lowering lever (46) pulls link assembly (50) down, drawing breech pin piston (20) and breech pin base (21) backward while carrier lever (47) raises the carrier block with next cartridge up to the chamber as empty cartridge is ejected through top of the receiver.





# WINCHESTER MODEL 1886 RIFLE

By JAMES M. TRIGGS

ON Oct. 14, 1884, U. S. Patent No. 306,577 was granted to John M. and Matthew S. Browning for a lever-action repeating rifle designed to handle the larger, more powerful blackpowder center-fire cartridges. The patent was assigned to Winchester Repeating Arms Co., whose gun designers subsequently effected several improvements. The Model 1886 Winchester rifle was first announced in October 1886, but initial deliveries had been made in August of that year. First chamberings were for the .45-90 WCF, .40-82 WCF, and .45-70 Government cartridges.

The Model 1886 was noteworthy for being the first repeating rifle to feature a sliding vertical lock. The action was fast and smooth, which contributed greatly to its subsequent popularity throughout the world.

Model 1886 rifles were serially num-

bered from 1 up. Production was discontinued in 1935. This model was offered in a host of calibers and in both takedown and solid-frame styles. On special order the Model 1886 was available with single-set trigger, subsequently changed to double-set pattern in May 1895. It was first listed with color-case-hardened receiver which was changed to blued finish in August 1901.

The Winchester Model 71 lever-action rifle introduced in 1936 was essentially a modernized version of the Model 1886. Production of the Model 71 was discontinued in November 1958.

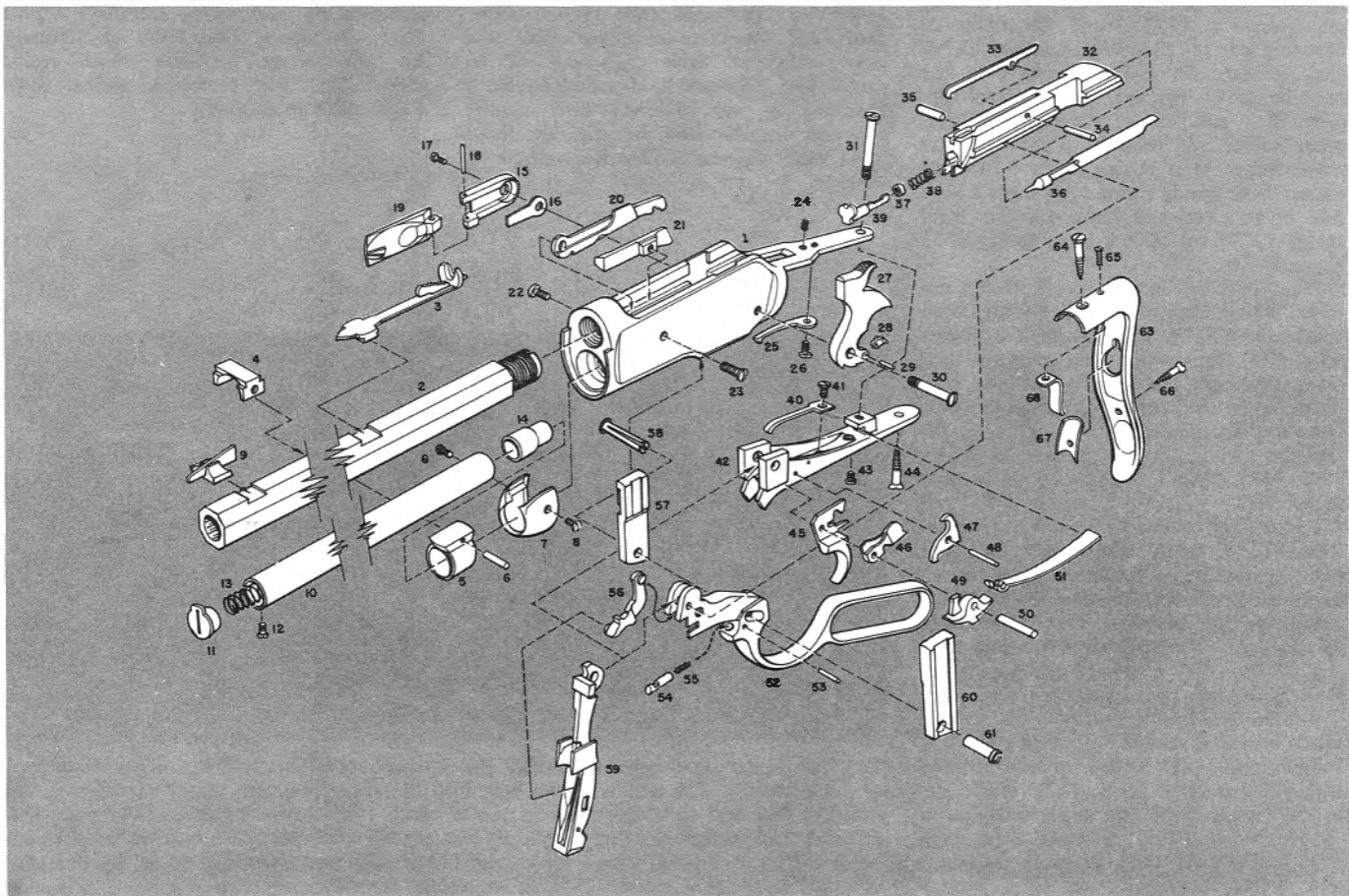
## Disassembly Procedure

Lower finger lever (52) and check chamber and magazine to insure that the rifle is not loaded.

To disassemble action, remove upper (31) and lower (44) tang screws. Remove

buttstock by rapping it sharply with the hand to loosen and then draw to rear off receiver tangs. Remove spring cover screw (17) to free spring cover assembly from receiver. Remove mainspring tension screw (43) and, with hammer (27) forward, drift out mainspring (51) from left to right with punch or screwdriver as shown in Fig. 1. NOTE: If lower edge of mainspring rests in tang mortise it cannot be drifted out until elevated to clear mortise. Elevate spring by driving wooden wedge between lower tang and front end of mainspring. (In reassembly take care that head of sear and trigger spring screw (41) rests level with top edge of tang so that lower edge of mainspring will lie even with or slightly above top surface of lower tang.)

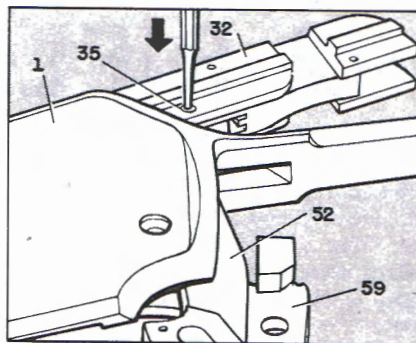
Remove receiver screw (30) and lift hammer out top of receiver. Lower tang (42) with trigger (45) and parts (46), (47), (48), (49), (50) can be pulled from receiver to rear. Remove carrier stop screw (26) and carrier stop (25) from underside



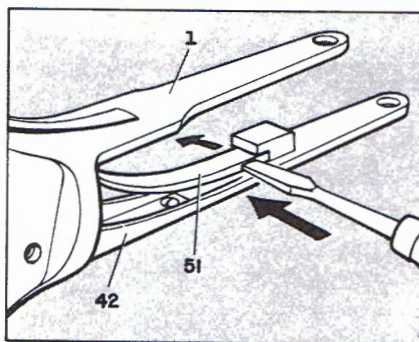


of upper tang. Drift out finger lever bushing pin (58) from left to right (this is a split pin and not a screw), and remove finger lever bushing (61). Remove left- (60) and right-hand (57) locking bolts. Lower finger lever, and back breechblock (32) out of receiver to expose lever and breechblock pin (35) which is drifted out with punch as shown in Fig. 2. Remove breechblock assembly to rear. Drop finger lever and carrier (59) with carrier hook (56) out bottom of receiver. Note in Fig. 3 how these parts are interlocked. Remove cartridge guide screw (22) from right side of receiver and cartridge guide (20) from inside receiver. Remove cartridge stop screw (23) from left side of receiver and cartridge stop (21) from inside receiver.

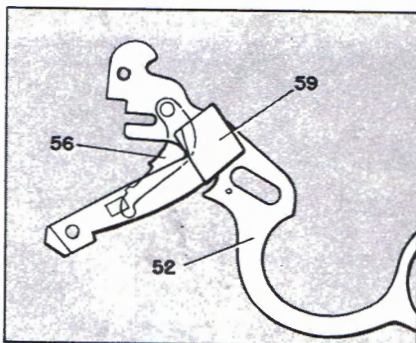
Reassemble in reverse order. Install breechblock, finger lever, carrier, and locking bolts before attempting to replace cartridge guide. Cartridge guide can be replaced through spring cover hole in right side of receiver, with rear end of cartridge guide in place in right-hand locking bolt.



**2** To remove breechblock (32), lower finger lever and back breechblock out of receiver until lever and breechblock pin (35) is exposed. Drift out pin as shown and remove breechblock to rear.



**1** To remove mainspring (51) from lower tang (42), drive out from left to right with large screwdriver blade.



**3** Interlock finger lever (52), carrier (59), and carrier hook (56) as shown before reassembly into receiver.

### Parts Legend

- |                                   |                                 |                                  |
|-----------------------------------|---------------------------------|----------------------------------|
| 1. Receiver                       | 26. Carrier stop screw          | 50. Trigger, sear, & kickoff pin |
| 2. Barrel                         | 27. Hammer                      | 51. Mainspring                   |
| 3. Rear sight assembly            | 28. Stirrup                     | 52. Finger lever                 |
| 4. Fore-end tip tenon             | 29. Stirrup pin                 | 53. Friction stud pin            |
| 5. Magazine ring                  | 30. Receiver screw              | 54. Friction stud                |
| 6. Magazine ring pin              | 31. Upper tang screw            | 55. Friction stud spring         |
| 7. Fore-end tip                   | 32. Breechblock                 | 56. Carrier hook                 |
| 8. Fore-end tip & tenon screw (2) | 33. Extractor                   | 57. Locking bolt, right          |
| 9. Front sight                    | 34. Extractor pin               | 58. Finger lever bushing pin     |
| 10. Magazine tube                 | 35. Lever & breechblock pin     | 59. Carrier                      |
| 11. Magazine plug                 | 36. Firing pin                  | 60. Locking bolt, left           |
| 12. Magazine plug screw           | 37. Ejector collar              | 61. Finger lever bushing         |
| 13. Magazine spring               | 38. Ejector spring              | 62. Not assigned                 |
| 14. Magazine follower             | 39. Ejector                     | 63. Buttplate                    |
| 15. Spring cover base             | 40. Sear & trigger spring       | 64. Upper buttplate screw        |
| 16. Spring cover spring           | 41. Sear & trigger spring screw | 65. Buttplate slide spring screw |
| 17. Spring cover screw            | 42. Lower tang                  | 66. Lower buttplate screw        |
| 18. Spring cover leaf pin         | 43. Mainspring tension screw    | 67. Buttplate slide              |
| 19. Spring cover leaf             | 44. Lower tang screw            | 68. Buttplate slide spring       |
| 20. Cartridge guide               | 45. Trigger                     |                                  |
| 21. Cartridge stop                | 46. Set trigger kickoff         |                                  |
| 22. Cartridge guide screw         | 47. Sear catch                  |                                  |
| 23. Cartridge stop screw          | 48. Sear catch pin              |                                  |
| 24. Plug screw                    | 49. Sear                        |                                  |
| 25. Carrier stop                  |                                 |                                  |

**Note:** Wood buttstock and fore-end are omitted from the drawing

## A MAN TO REMEMBER

**HORACE E. DIMICK**  
*Supplied fine arms to the Old West*

*Born—Vermont, about 1811*

*Died—St. Louis, Mo., Aug. 27, 1873*



Little is known of the parentage or early life of Horace Dimick. Even the place and date of his birth are matters of tradition. It is known, however, that he had migrated to Lexington, Ky., before 1838 and that he operated a cabinetmaking and upholstery shop there before setting up in business as a gunsmith. His interest in firearms and shooting was already manifest.

In 1849 Dimick moved to St. Louis, and thereafter his history becomes clearer. His first shop opened under the name of H. E. Dimick & Co. at 38 N. Main St. and prospered so famously that he was able to open a branch store at 97 N. 4th St. in December 1861. A month later the new store became the home of the company. Working with Dimick were a number of employees and associates, ranging in numbers as high as 13 at peak periods, if one includes those making arms or components under direct contract but outside the shop. In addition to those arms made within his own shop or by contract under his direction, Dimick also purchased large quantities of arms of all sorts from manufacturers elsewhere in the United States and in Europe. The scope of his stock was broad, including plains rifles, target rifles, shotguns, target pistols, deringers, revolvers, bowie knives, tomahawks, cannon, ammunition, and supplies.

Dimick's own specialty remained fine target arms, especially rifles. It is reasonably certain that most such arms bearing the Dimick name were actually made in his shop rather than purchased from another manufacturer, and they were exceptionally well-made arms. He was also interested in cannon, experimenting with breech-loading systems and inventing a rifled 'torpedo cannon' for harbor defense which he vainly tried to sell to the government.

With the coming of the Civil War, Dimick supplied quantities of arms to the Federal government and to the State of Missouri. Some of these he apparently manufactured himself, but for most he acted merely as a purchasing agent. Apparently Dimick's business continued uninterrupted throughout the War, and he remained active until his death at about the age of 62.—HAROLD L. PETERSON



# WINCHESTER MODEL 1892 RIFLE

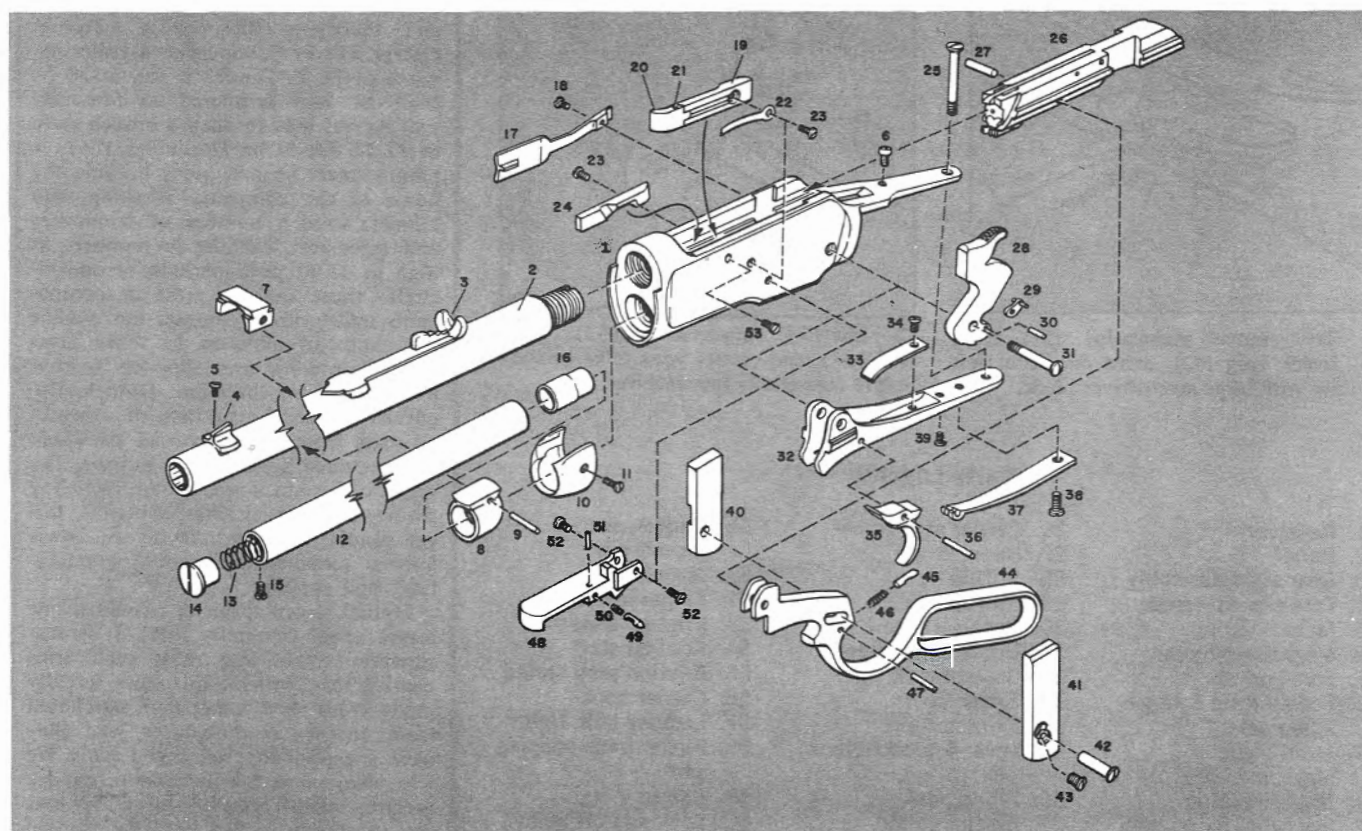
By JAMES M. TRIGGS

THE Winchester Model 1892 lever-action rifle was designed by John M. Browning. It is essentially a scaled-down and somewhat simplified version of the Winchester Model 1886 rifle, also invented by Browning. The Model 1892 was manufactured in sporting rifle, carbine, and musket styles and was chambered for the .44-40, .38-40, .32-20,

and .25-20 Winchester center-fire cartridges. The takedown version was first offered in 1893. Set triggers (single-set or double-set) could be had on special order. Extras, including longer than standard barrels, shotgun buttstock, pistol grip stock, etc., were also furnished at extra cost.

Despite the relatively low power of

the cartridges for which it was chambered, the Model 1892 proved extremely popular. About 735,000 of this model had been sold by the end of 1914. Near the end of its manufacture it was redesignated Model 92. Manufacture of the Model 1892 in rifle form was discontinued in 1932, but it was made in carbine version until 1941.



## Parts Legend

- |                            |                                |                                      |                                 |   |
|----------------------------|--------------------------------|--------------------------------------|---------------------------------|---|
| 1. Receiver                | 13. Magazine spring            | 24. Cartridge guide, right           | 35. Trigger                     | 46. Friction stud spring                    |
| 2. Barrel                  | 14. Magazine plug              | 25. Upper tang screw                 | 36. Trigger pin                 | 47. Friction stud stop pin                  |
| 3. Rear sight assembly     | 15. Magazine plug screw        | 26. Breechbolt assembly (see Fig. 1) | 37. Mainspring                  | 48. Carrier                                 |
| 4. Front sight             | 16. Magazine follower          | 27. Lever & breechbolt pin           | 38. Mainspring screw            | 49. Carrier stop                            |
| 5. Front sight screw       | 17. Spring cover               | 28. Hammer                           | 39. Mainspring strain screw     | 50. Carrier stop spring                     |
| 6. Upper tang plug screw   | 18. Spring cover screw         | 29. Stirrup                          | 40. Locking bolt, right         | 51. Carrier stop pin                        |
| 7. Forearm tip tenon       | 19. Cartridge guide, left      | 30. Stirrup pin                      | 41. Locking bolt, left          | 52. Carrier screws (2)                      |
| 8. Magazine ring           | 20. Cartridge stop             | 31. Hammer screw                     | 42. Locking bolt pin            | 53. Lever & breechblock pin hole plug screw |
| 9. Magazine ring pin       | 21. Cartridge stop joint pin   | 32. Lower tang                       | 43. Locking bolt pin stop screw |   |
| 10. Forearm tip            | 22. Cartridge stop spring      | 33. Trigger spring                   | 44. Finger lever                |   |
| 11. Forearm tip screws (2) | 23. Cartridge guide screws (2) | 34. Trigger spring screw             | 45. Friction stud               |   |
| 12. Magazine tube          |                                |                                      |                                 |   |

Note: Buttstock, buttplate & screws, and forearm are not shown.



## Disassembly Procedure

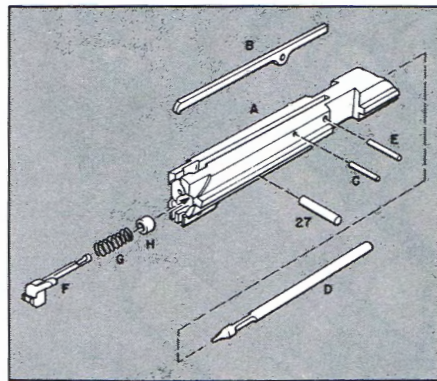
Check action to be sure rifle is unloaded. Remove upper tang screw (25) and remove buttstock to rear by rapping it sharply with heel of hand to loosen. Unscrew magazine plug screw (15) and pull magazine plug (14) out front end of magazine tube (12). Draw magazine spring (13) and follower (16) out front of magazine tube. Remove forearm tip screws (11) from both sides of forearm tip (10). Drift magazine ring pin (9) out of magazine ring (8). Draw magazine tube (12) away from receiver to front, separating magazine tube and wooden forearm and removing forearm tip from tube.

To disassemble action, open finger lever (44) and remove mainspring screw (38) and mainspring (37). Remove hammer screw (31) and remove hammer (28) from top of receiver (1). Lower tang (32) may be slid out of its grooves to rear.

With finger lever (44) partially opened, remove locking bolt pin stop screw (43) and drift locking bolt pin (42) out of locking bolts from right to left. Draw right and left locking bolts (40, 41) down out of receiver. With finger lever closed and bolt in its foremost locked position, remove plug screw (53) from left side of receiver and drift lever and breechbolt pin (27) out of breechbolt (26) from right to left using a suitable punch inserted through hole in right side of receiver. Remove finger lever (44) and draw breechbolt assembly (26) out of receiver to rear.

Remove carrier screws (52) from either side of receiver. Slide carrier (48) to rear and down out of receiver.

Cartridge guides (24, 19) can be removed from inside walls of receiver by unscrewing cartridge guide screws (23). Spring cover is removed by removing cover screw (18) from right of receiver.



- |                  |                        |
|------------------|------------------------|
| A. Breechbolt    | E. Firing pin stop pin |
| B. Extractor     | F. Ejector             |
| C. Extractor pin | G. Ejector spring      |
| D. Firing pin    | H. Ejector collar      |

Note: The ejector guide and ejector guide pins are not shown as separate parts. They are contained on the underside of the breechbolt at its front end. Disassembly of ejector guide is seldom necessary and is not recommended.

**1** Bolt assembly. After removing breechbolt from receiver, disassembly of all components is accomplished by removing the pins C and E. Ejector parts are pulled forward out of breechbolt after removing breechbolt from receiver.

## FAMOUS FIREARMS

# The Kentucky Rifle



**T**HE Kentucky rifle was a distinctly American gun, and in fact it is sometimes called the American rifle, especially by Europeans. Because it was developed in Pennsylvania by the German and Swiss colonists who settled there in some numbers after 1710, it has also frequently been called the Pennsylvania rifle. It received the name of Kentucky rifle, by which it is most commonly known today, because it was a very popular arm with the men who explored and settled the area that later became the states of Kentucky and Tennessee.

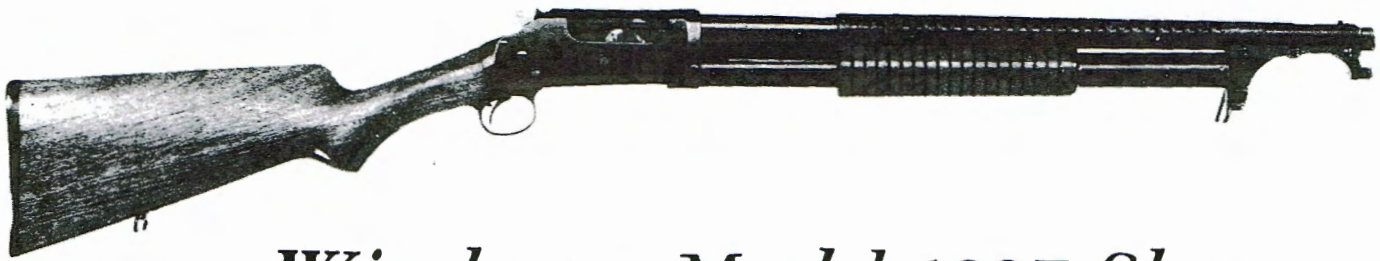
The Pennsylvania colonists who developed this rifle came from a part of Europe where rifles were a common weapon for hunters and gamekeepers. They brought this gun with them. It was a short rifle with a large bore and usually a patch box in the stock with sliding wooden lid. In this they kept the greased patches to be wrapped around the ball in loading, thus obtaining the tight fit necessary to take the rifling.

The conditions of the New World dictated changes in this design. The barrel was lengthened for better accuracy at long ranges. The caliber was reduced to conserve both lead and powder which were frequently in short supply. The patch box acquired a hinged cover of brass to replace the sliding wooden lid, a graceful drop gradually developed in the butt, and a new series of inlays and carved designs came into being. When all these changes had taken place there appeared a long, slender, and graceful rifle which at the same time was supremely accurate.

The evolution of the Kentucky rifle was slow. The first rifles made in Pennsylvania resembled the European antecedents. The earliest alteration was the lengthening of the barrel. Then the introduction of the brass patch box cover and a gradual reduction in caliber. By 1750 it had become a new type. But still its lines were distinctly European. The butt was quite straight and thick. The graceful drop in the butt came towards the end of the 18th century, and at the same time the practice in inlaying decorative plates of brass, silver, or pewter also became popular, reaching its height about the turn of the century. This was the Kentucky rifle at the zenith of its development. Thereafter a gradual decline set in. The rifle remained accurate, but architecture and decoration deteriorated.

The Kentucky rifle was primarily a civilian arm, designed for hunting and protection against Indians in forest fighting along the frontiers. It was not designed for military use in the formal warfare of its day, but nevertheless it did make its impact felt in the hands of light infantry, sharpshooters, and other special troops. The Battle of Kings Mountain is unique as a rifle victory in the Revolution, and, in conjunction with magnificent artillery action, the rifle helped win the Battle of New Orleans in the War of 1812.—HAROLD L. PETERSON





# Winchester Model 1897 Shotgun

By Thomas E. Wessel

**I**N 1890 Winchester Repeating Arms Co. of New Haven, Conn., purchased a patent from the Browning brothers of Ogden, Utah, covering a slide-action shotgun with visible hammer and side ejection. In June 1893 this shotgun was placed on the market as the Winchester Repeating Shotgun Model 1893. The Model 1893 did not prove entirely satisfactory for use with

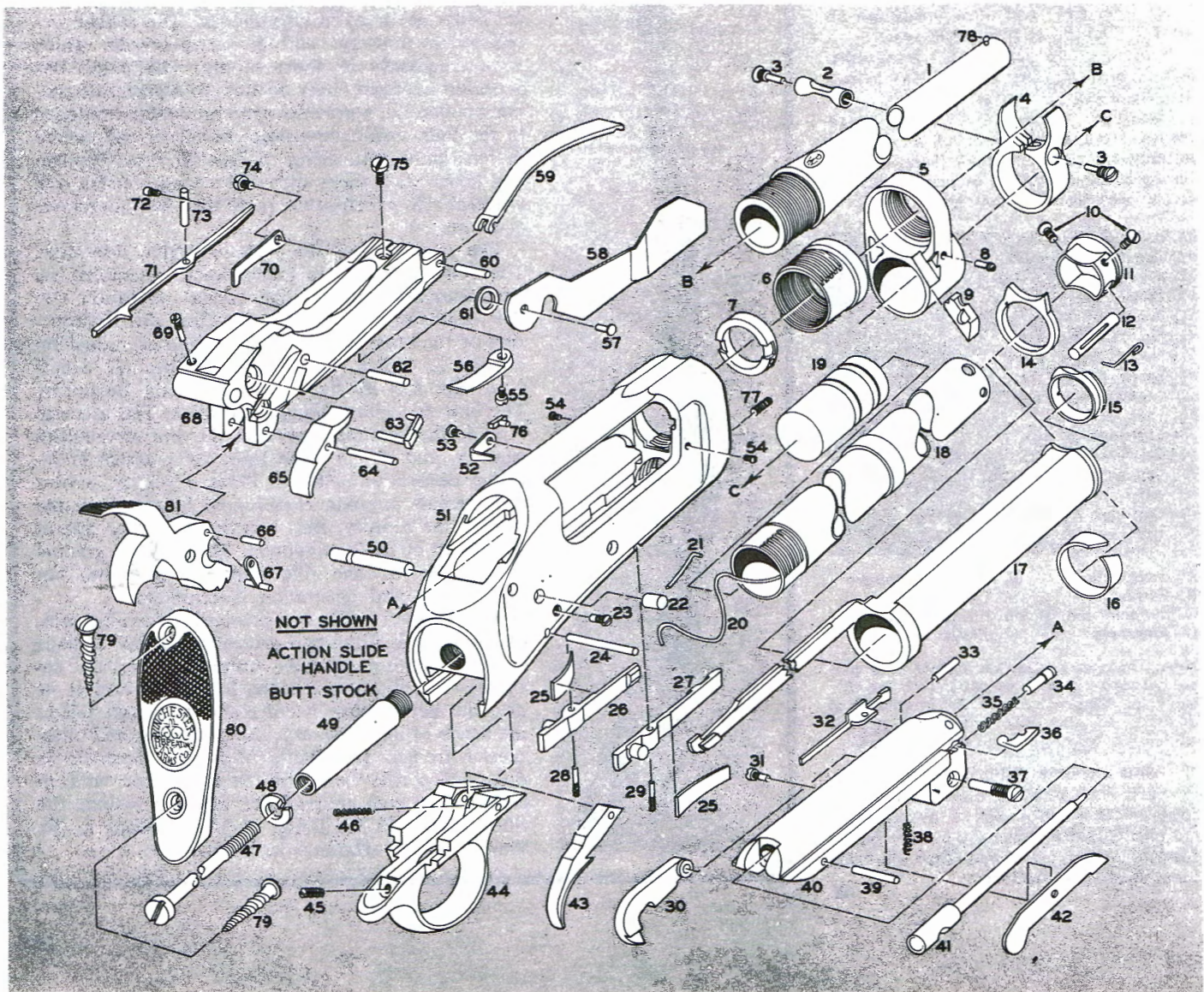
the smokeless powder shells then coming into popular use, thus its manufacture was discontinued in 1897.

In November 1897 Winchester offered an improved version of this shotgun designated Model 1897. Initial offering was in 12 ga., solid frame only. The takedown model in 12 ga. was added in October 1898, followed by the 16-ga. takedown in 1900. Various other grades and types were eventually introduced, including the 12-ga. Trench Gun issued to U. S. troops during World War I. This unique 20" barrel

shotgun had a perforated metal barrel jacket and was adapted for use with rifle bayonet.

Until 1914 Damascus barrels were optionally available at extra cost for the Model 1897. Serial numbers were a continuation of the Model 1893 series, with the first Model 1897 gun bearing the number 34151. Manufacture of the Model 1897 was discontinued Jan. 1, 1957. Serial number of the last Model 1897 shotgun was 1024700 and it was shipped from the factory on Sept. 27, 1957.

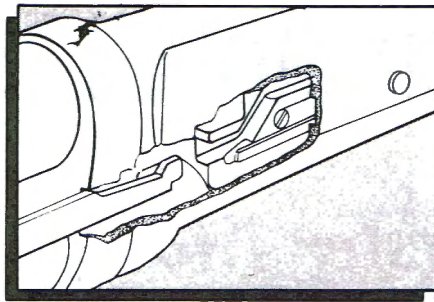
THOMAS E. WESSEL of Whippany, N. J. is a technical illustrator long interested in firearms.



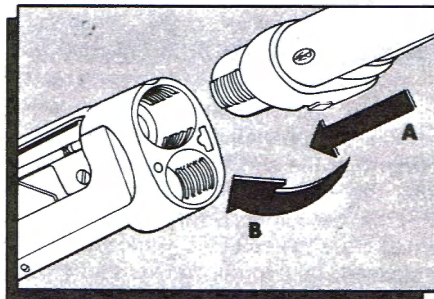


## Parts Legend

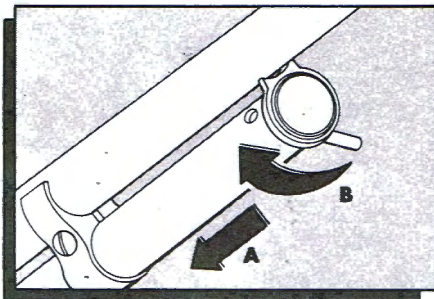
1. Barrel
2. Magazine band bushing
3. Magazine band bushing screw (2)
4. Magazine band
5. Extension
6. Adjusting sleeve
7. Barrel chamber ring
8. Adjusting sleeve lock screw
9. Adjusting sleeve lock
10. Magazine plug screw (2)
11. Magazine plug
12. Magazine locking pin
13. Magazine locking pin spring
14. Magazine plug stop
15. Action slide sleeve screw cap
16. Action slide spring
17. Action slide
18. Magazine tube
19. Magazine follower
20. Magazine spring
21. Action slide lock release plunger pin spring
22. Action slide lock release plunger pin
23. Cartridge guide stop screw
24. Trigger pin
25. Cartridge stop spring (2)
26. Left cartridge stop
27. Right cartridge stop
28. Cartridge stop screw, left
29. Cartridge stop screw, right
30. Action slide hook
31. Firing pin lock screw
32. Extractor, left
33. Extractor pin, left
34. Extractor plunger, right
35. Extractor plunger spring, right
36. Extractor, right
37. Action slide hook screw
38. Firing pin lock spring
39. Firing pin stop pin
40. Breech bolt
41. Firing pin
42. Firing pin lock
43. Trigger
44. Guard bow
45. Trigger stop screw
46. Trigger spring
47. Buttstock bolt
48. Buttstock bolt washer
49. Receiver shank
50. Carrier pin
51. Receiver
52. Ejector spring
53. Ejector spring screw
54. Barrel chamber ring retaining screw (2)
55. Sear spring screw
56. Sear spring
57. Cartridge guide rivet
58. Cartridge guide
59. Mainspring
60. Mainspring pin
61. Cartridge guide friction spring
62. Hammer pin
63. Action slide lock release plunger
64. Sear pin
65. Sear
66. Hammer stirrup pin
67. Hammer stirrup
68. Carrier
69. Carrier pin stop screw
70. Action slide lock screw
71. Action slide lock
72. Action slide lock joint pin stop screw
73. Action slide lock joint pin
74. Action slide lock spring screw
75. Mainspring strain screw
76. Ejector pin
77. Extension stop screw
78. Front sight
79. Buttplate screw (2)
80. Buttplate
81. Hammer



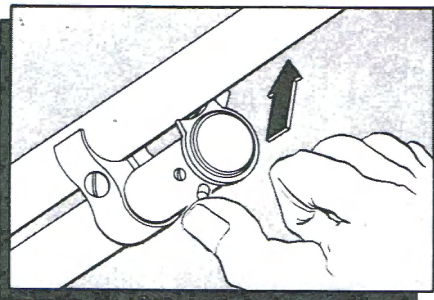
**1** Since assembly of Model 1897 from field takedown is a bit more tricky than disassembly, sequence shown is for assembly. First, insure that breech bolt (40) is in battery and carrier (68) is fully up. This will align actuating groove on left side of carrier with corresponding notch on arm of action slide (17). Cutaway view shows action slide arm just prior to engaging groove



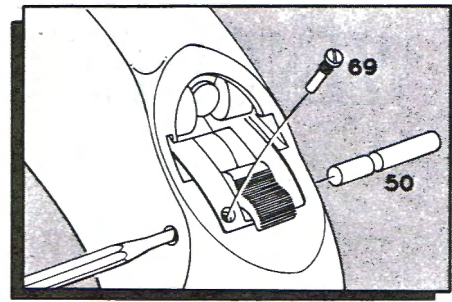
**2** Next (A), turn barrel (1) and assembly 90° left and insert into adjusting sleeve (6) in receiver (51). Then (B), turn barrel assembly 90° downward. Interrupted screw threads will engage and tighten barrel assembly into receiver assembly



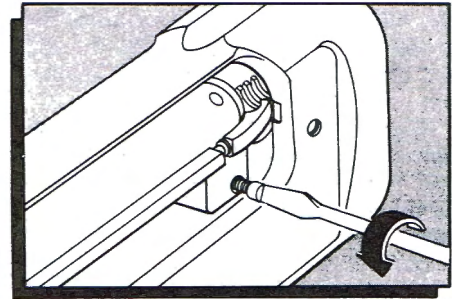
**3** Push in (A) on magazine plug (11) with magazine locking pin (12) in position shown. This will align threaded portion of magazine tube (18) with corresponding threads in lower half of receiver. Turn (B) the locking pin clockwise to engage threads



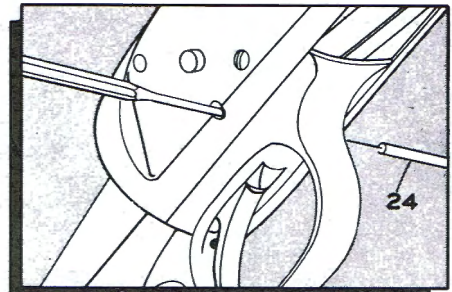
**4** Lock magazine assembly into receiver by pressing up on magazine locking pin as shown. Disassemble in reverse order



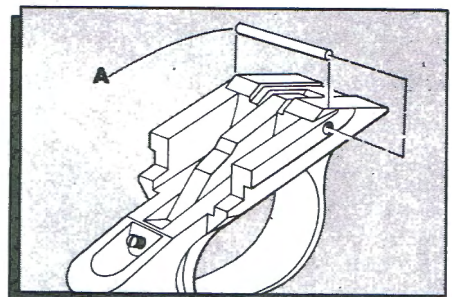
**5** Continue disassembly by removing carrier pin stop screw (69), dropping hammer, and pushing down carrier. Cock hammer, and drift out carrier pin (50). Remove cartridge guide stop screw (23), and entire carrier assembly may be lifted away from bottom of receiver



**6** Disengage breech bolt (40) from action slide hook (30) by unscrewing action slide hook screw (37). Breech bolt together with action slide hook may now be removed, breech bolt from rear of receiver and hook from side or bottom



**7** Remove 2 buttplate screws (79) and buttplate (80). Using a long-shanked screwdriver, remove buttstock bolt (47) and buttstock boltwasher (48). Then, with a flat-nosed punch, drift out trigger pin (24). Remove guard bow (44) and assembly from back end of receiver



**8** Reassemble Model 1897 in reverse order. When reassembling trigger (43) and trigger spring (46), use a piece of smooth nail (A) as a temporary trigger pin. Cut it to width of guard bow as shown. When this assembly is replaced in receiver and trigger pin reinserted, it will drive out slave pin. This reassembly knack will facilitate operation.

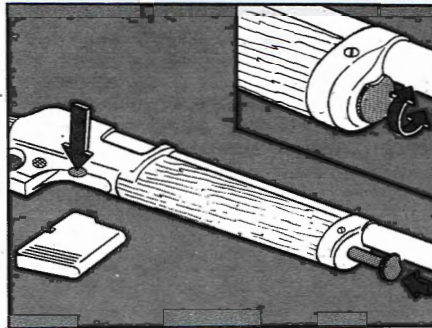


# WINCHESTER MODEL 1905 RIFLE

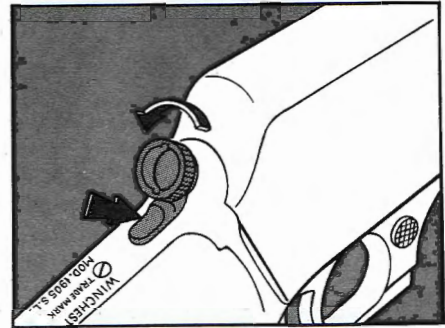
By E. J. HOFFSCHMIDT

**I**NTRODUCED in 1905, the Winchester Model 1905 self-loading rifle was developed by Thomas C. Johnson, a Winchester engineer. Featuring a simple, blowback-operated mechanism, the Model 1905 was designed for the .32 and .35 Winchester self-loading smokeless cartridges.

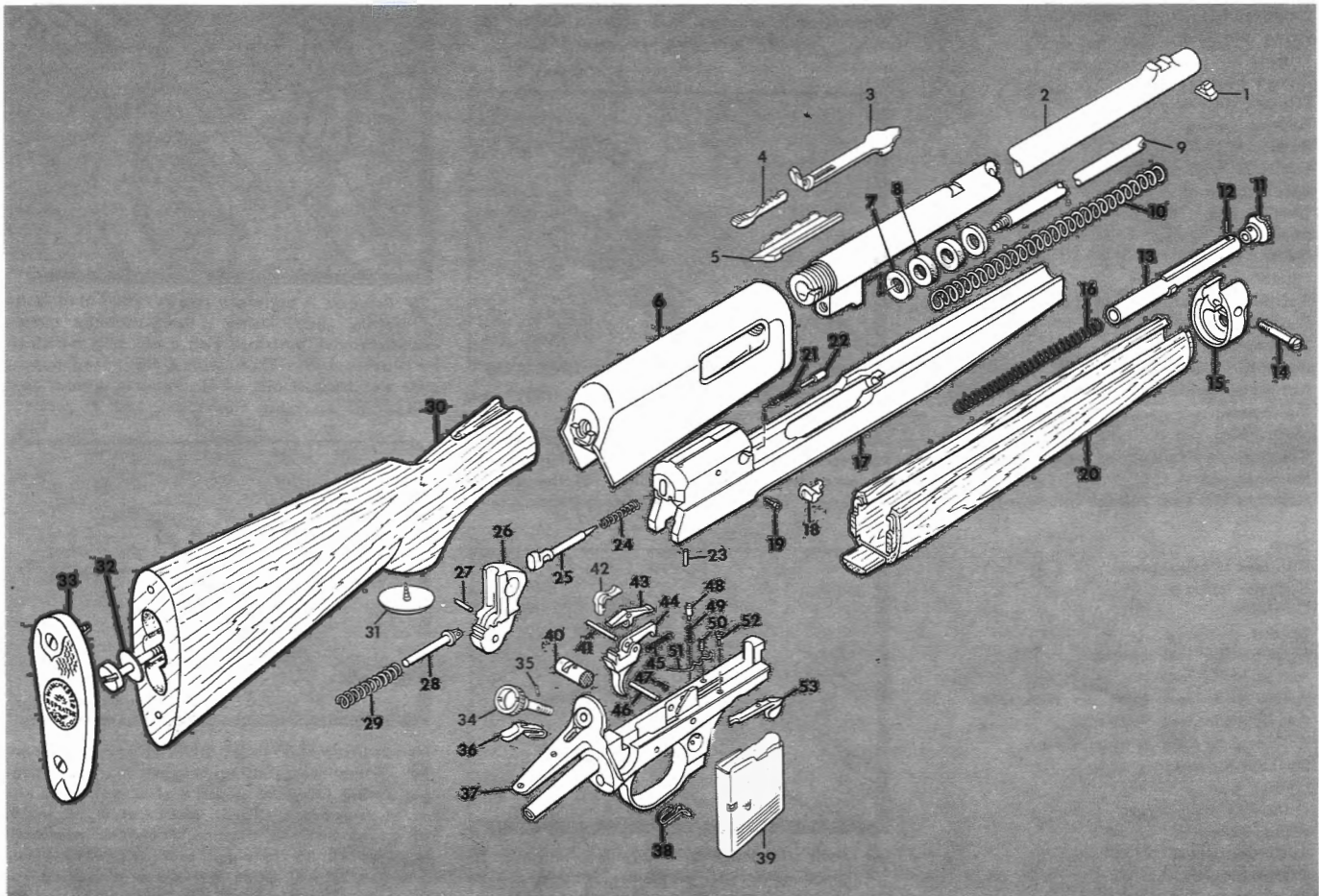
The Model 1905 rifle was discontinued in 1920 after more than 29,000 had been manufactured. A 22" round barrel was standard on this rifle and both 5-shot and 10-shot detachable box magazines were available. The Model 1905 was the first Winchester rifle of self-loading type to be chambered for center-fire cartridges, and was also the first Winchester rifle to feature a detachable box magazine.



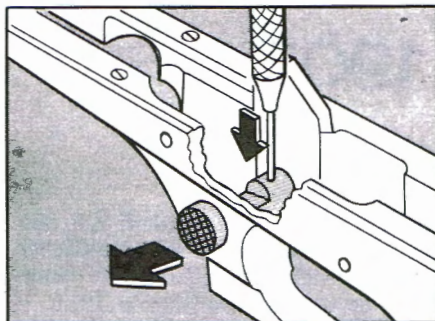
**1** To disassemble the Model 1905, first remove the magazine (39). Then push back on the operating sleeve (13) projecting from the end of the forearm. This clears the chamber and cocks the hammer (26). Ease the operating sleeve forward to close the bolt (17). If the gun is to be cleaned, turn the operating sleeve tip (11) either left or right while the sleeve is depressed. This locks the bolt open.



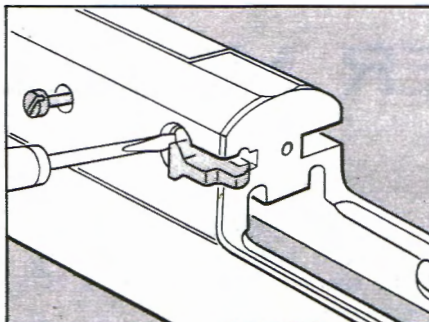
**2** To further disassemble, press on the takedown screw lock (36) and turn the takedown screw (34) in the direction shown. When it is free of the threads, pull the barrel and frame straight forward and the buttstock and trigger assembly then pulls away from the barrel and receiver. The hammer should be cocked when reassembling the butt section to the receiver.



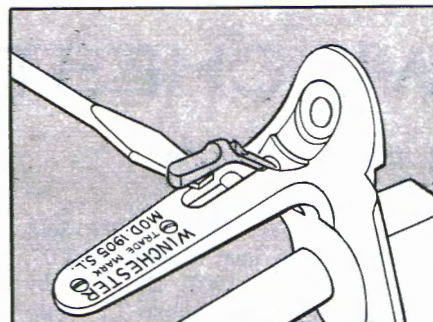




**3** The safety catch (40) is retained by the plunger spring (49) and safety catch plunger (48). To remove the safety catch, insert a punch or nail in the hole in the safety catch. Press the safety catch plunger downward and at the same time push the safety catch out from right to left. All other pins must be driven out from left to right.



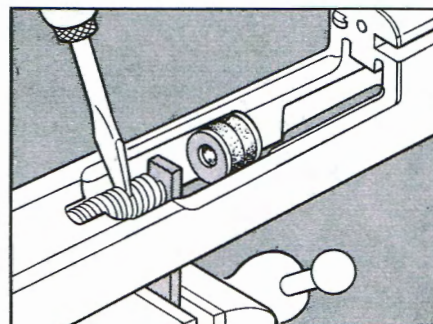
**4** The extractor is retained by the extractor spring (21) and extractor plunger (22). To remove the extractor, first take out the extractor plunger stop screw (19). Then insert a thin screwdriver between the extractor and extractor plunger. Push back the extractor plunger as far as possible and lift out the extractor (18).



**5** To remove the takedown screw (34), drive out the screw stop pin (35) just above the threads on the takedown screw and remove it from the trigger mechanism housing (37). Takedown screw lock (36) can then be removed by prying it out carefully, as shown, with a screwdriver.

## PARTS LEGEND

- |                                  |                               |                                  |
|----------------------------------|-------------------------------|----------------------------------|
| 1. Front sight                   | 20. Forearm                   | 37. Trigger mechanism housing    |
| 2. Barrel                        | 21. Extractor spring          | 38. Trigger spring               |
| 3. Rear sight                    | 22. Extractor plunger         | 39. Magazine                     |
| 4. Sight elevator                | 23. Firing pin retainer pin   | 40. Safety catch                 |
| 5. Ejector                       | 24. Firing pin spring         | 41. Trigger pin                  |
| 6. Receiver                      | 25. Firing pin                | 42. Disconnecter                 |
| 7. Steel buffer washers          | 26. Hammer                    | 43. Sear                         |
| 8. Fiber buffer washers          | 27. Hammer strut pin          | 44. Trigger                      |
| 9. Bolt guide rod                | 28. Hammer strut              | 45. Sear spring                  |
| 10. Recoil spring                | 29. Hammer spring             | 46. Hammer pin                   |
| 11. Operating sleeve tip         | 30. Buttstock                 | 47. Magazine catch spring        |
| 12. Tip pin                      | 31. Butt cap                  | 48. Safety catch plunger         |
| 13. Operating sleeve             | 32. Buttstock bolt and washer | 49. Plunger spring               |
| 14. Forearm screw                | 33. Buttplate                 | 50. Disconnecter spring retainer |
| 15. Forearm tip                  | 34. Takedown screw            | 51. Disconnecter spring          |
| 16. Operating sleeve spring      | 35. Screw stop pin            | 52. Magazine catch screw         |
| 17. Bolt                         | 36. Takedown screw lock       | 53. Magazine catch               |
| 18. Extractor                    |                               |                                  |
| 19. Extractor plunger stop screw |                               |                                  |



**6** Do not remove the recoil spring (10) and bolt guide rod (9) from the buffer assembly unless it is necessary. If removed, reassemble by first inserting the recoil spring and bolt guide rod in the bolt (17). Clamp a rectangular piece of steel in a vise and push back on the recoil spring and bolt guide rod. Insert the buffers with steel washers (7) on the outside. Ease the recoil spring and bolt guide rod up to the washers. Be sure the bolt guide rod is up against the steel bar so the recoil spring does not slip off the bolt guide rod and kink. Hold back the recoil spring with a screwdriver and ease out the steel bar. When the recoil spring is against the washers, push the bolt guide rod through the buffers and screw into place. ■





# WINCHESTER MODEL 1907

By JAMES M. TRIGGS

**T**HE Winchester Model 1907 Self-Loading rifle, later called Model 07, was introduced in 1907. Designed by Winchester engineer Thomas C. Johnson, it was essentially an improved model of the earlier Model 1905 rifle which also had been designed by Johnson.

The Model 1907 rifle is blowback operated and is chambered for the .351 Winchester Self-Loading cartridge, a cartridge made for use in this arm only. It

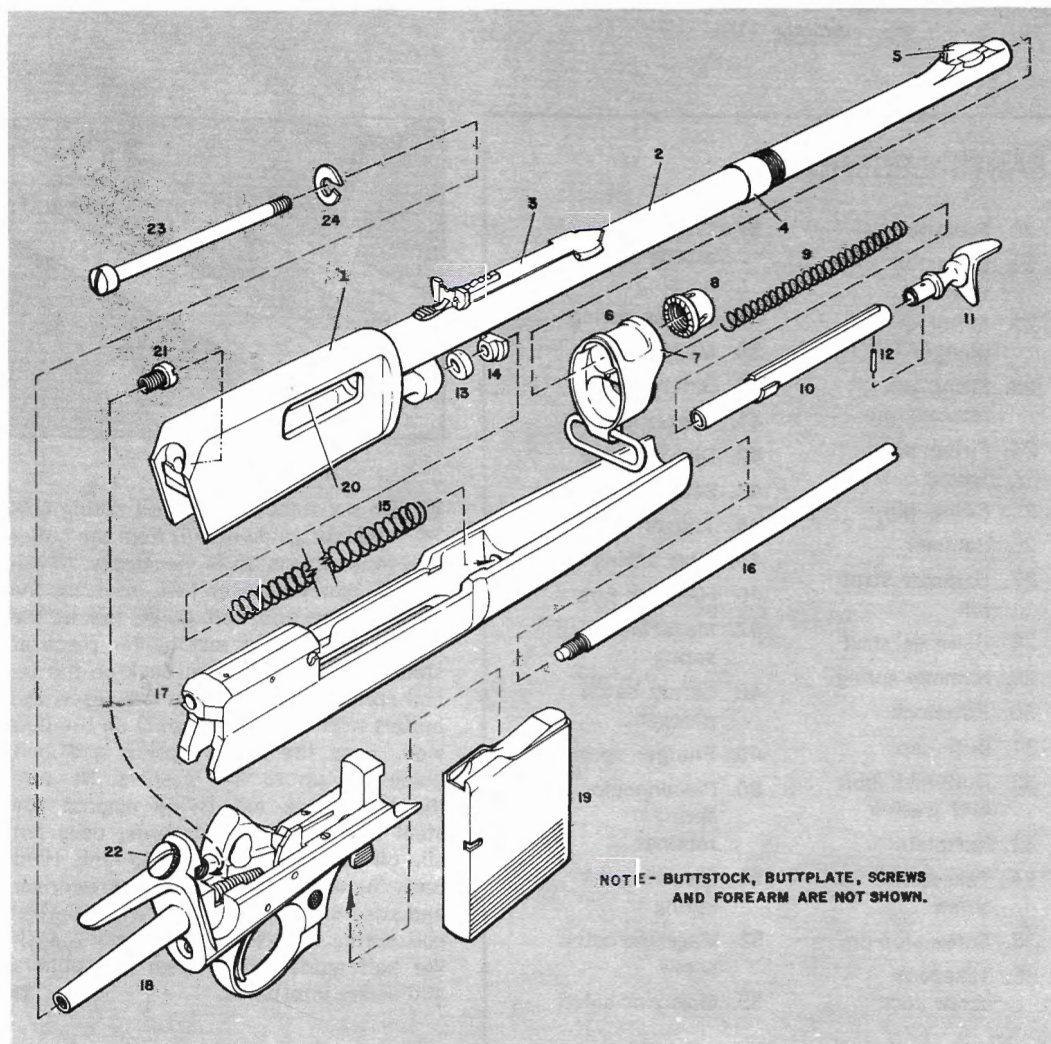
fires a 180-gr. bullet at a muzzle velocity of 1856 feet per second (f.p.s.). Muzzle energy of this cartridge is 1378 foot-pounds (ft.-lbs.).

Breech mechanism of the Model 1907 rifle is of so-called balanced type in which the breechbolt assembly is proportioned in weight to the weight and velocity of the bullet. It was so designed that the breech remained sufficiently closed until the bullet had left the barrel.

A 20" barrel was standard for this rifle. Both 5-shot and 10-shot detachable box magazines were offered, the latter having been made available in 1911.

The Model 1907 Police rifle was authorized in 1934. It was equipped with 1¼" sling strap and could be had with detachable knife bayonet.

Manufacture of the Police rifle was discontinued in 1937, and the sporting rifle was discontinued in January 1957.



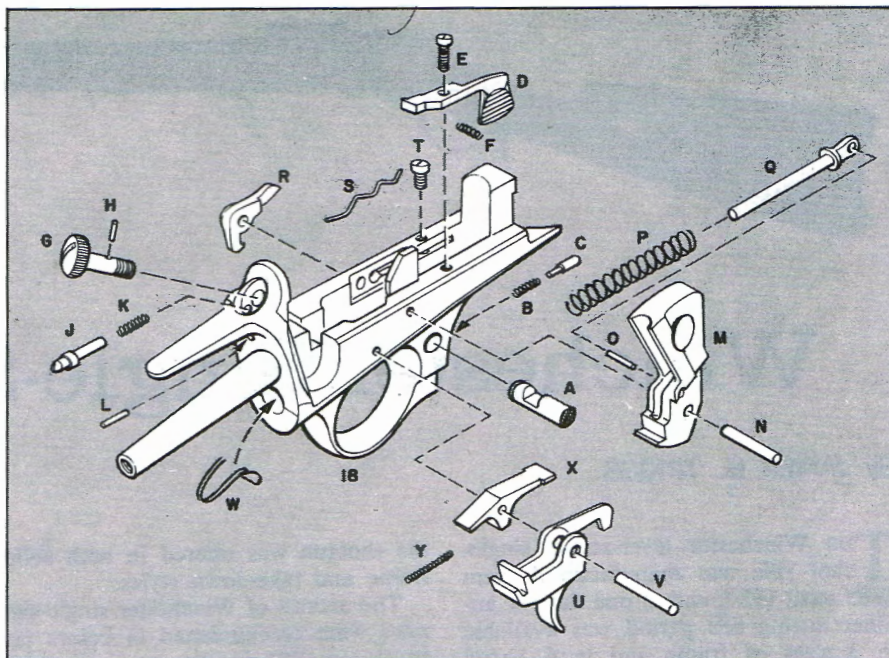
## Parts Legend

1. Receiver
2. Barrel
3. Rear sight assembly
4. Forearm tip key
5. Front sight
6. Forearm tip (with bow)
7. Forearm tip nut plunger and spring
8. Forearm tip nut
9. Operating sleeve spring
10. Operating sleeve
11. Operating sleeve tip
12. Operating sleeve tip pin
13. Buffer washers
14. Buffer
15. Bolt spring
16. Bolt guide rod
17. Bolt assembly (see Fig. 2.)
18. Guard assembly (see Fig. 1.)
19. Magazine
20. Ejector
21. Takedown screw bushing
22. Takedown screw
23. Buttstock bolt
24. Buttstock bolt washer



## Guard Assembly

- A. Trigger lock
- B. Trigger lock plunger spring
- C. Trigger lock plunger
- D. Magazine lock
- E. Magazine lock screw
- F. Magazine lock spring
- G. Takedown screw (No. 22)
- H. Takedown screw stop pin
- J. Takedown screw lock
- K. Takedown screw lock spring
- L. Takedown screw lock pin
- M. Hammer
- N. Hammer pin
- O. Hammer spring guide rod pin
- P. Hammer spring
- Q. Hammer spring guide rod
- R. Timing lever
- S. Timing lever spring
- T. Timing lever spring screw
- U. Trigger
- V. Trigger pin
- W. Trigger spring
- X. Sear
- Y. Sear spring



1 Complete guard assembly is shown here. Since the respective retaining pins are staked in place at the factory,

disassembly of this component is not recommended and should only be undertaken by a competent gunsmith.

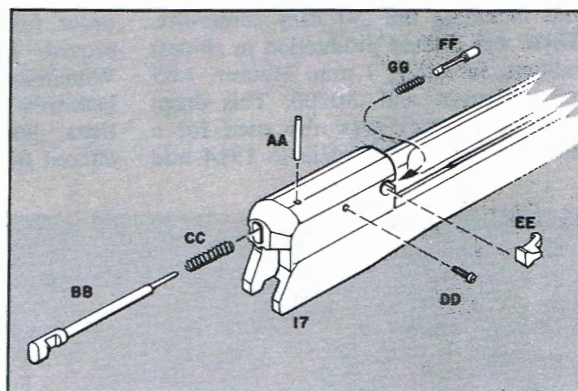
## Disassembly Procedure

Check action to be sure rifle is unloaded. Press in magazine lock (D, Fig. 1) and withdraw magazine (19) from bottom of receiver and guard assembly (1 & 18). Cock hammer, loosen takedown screw (22), and separate guard and buttstock assembly from receiver and barrel assembly. Buttstock can be removed from guard assembly by removing buttplate (not shown) and unscrewing buttstock bolt (23) through hole in rear of buttstock. Buttstock may be drawn off the tang of the guard assembly to the rear.

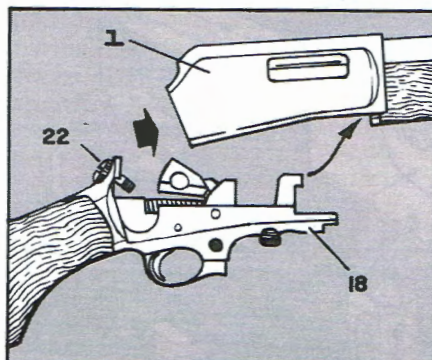
Unscrew forearm tip nut (8) using a suitable spanner. Slide nut forward on barrel. Tap forearm tip (6) forward off forearm, and draw tip with operating sleeve (10) and operating sleeve spring (9) intact forward on barrel. Remove spring (9) from sleeve. Note that operating sleeve is pinned to operating sleeve tip (11) and cannot be separated from forearm tip (6) without first removing pin (12) and tip from sleeve. Pull wooden forearm (not shown) forward away from front edge of receiver (1) and off front end of bolt.

Bolt spring (15) can be removed by unscrewing bolt guide rod (16) from front end of bolt while holding bolt (17) in its rearmost position. Withdraw bolt guide rod and draw bolt forward. Remove bolt spring (15) through opening in bottom of bolt, taking care not to allow compressed spring to escape forcibly.

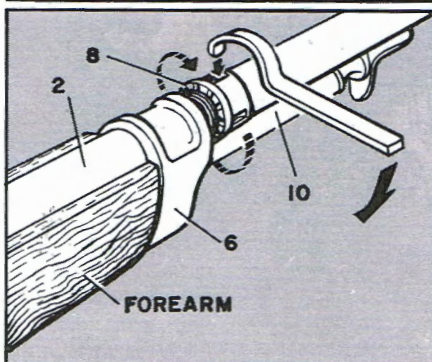
**Note:** Since reassembly of bolt spring (15), guide rod (16), buffer washers and buffer (13 & 14), and bolt (17) cannot be accomplished without factory tools, *disassembly of the bolt is not recommended* and should only be attempted by a skilled gunsmith with the proper tools at hand. Disassembly of the bolt is seldom if ever necessary for normal cleaning purposes and maintenance. Reassemble in reverse.



2 The bolt assembly is shown disassembled here. Firing pin (BB) and spring (CC) are removed by drifting out pin (AA). Extractor (EE), spring (GG), and plunger (FF) are removed by unscrewing the screw (DD).



3 After loosening takedown screw (22), pull receiver and barrel straight forward slightly to disengage lug at forward end of guard (18) from corresponding groove in front end of receiver (1). Lift barrel and receiver assembly from guard and buttstock assembly.



4 When removing forearm tip nut (8), a suitable type of spanner wrench should be used as shown to prevent damaging nut. After unscrewing nut, slide it forward on barrel to allow forearm tip (6) to be moved forward, away from front edge of wood forearm.





# Winchester Single-Shot Rifle

By JAMES M. TRIGGS

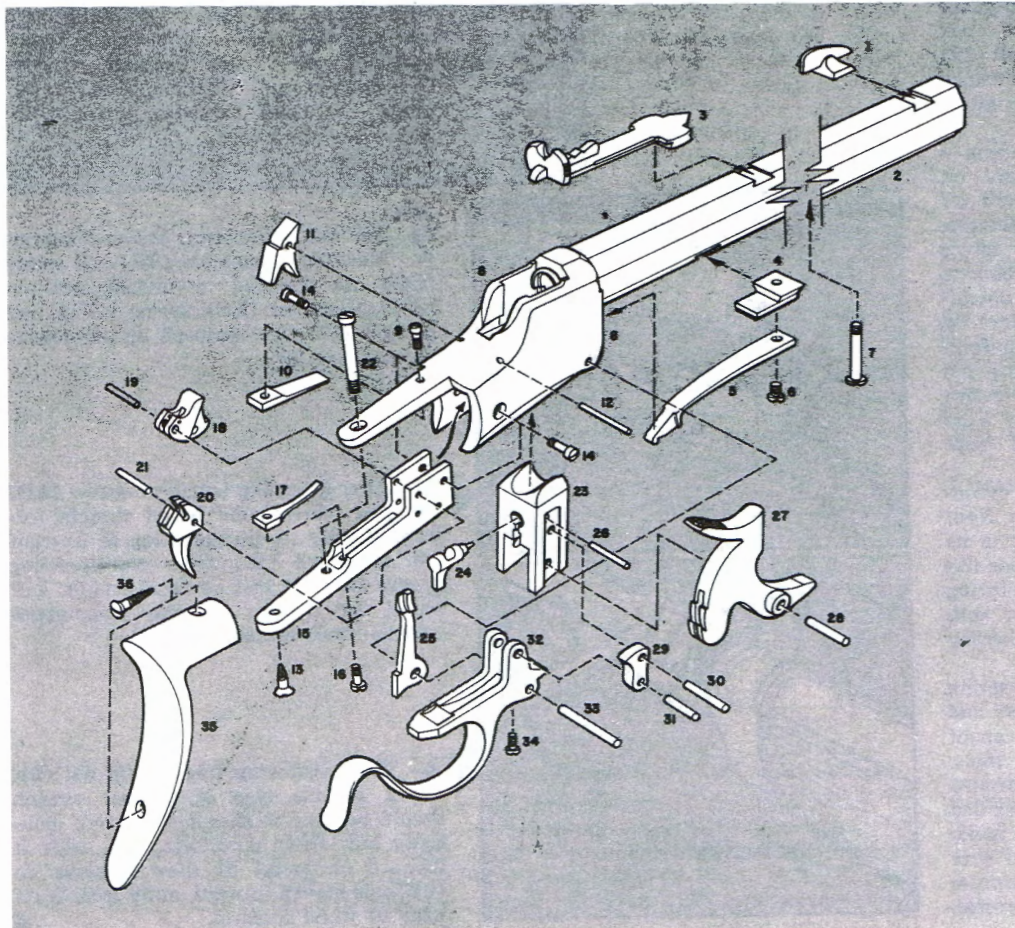
**T**HE Winchester lever-action single-shot rifle was manufactured from 1885 until 1920, and at one time or another during this period was available in 3 sizes of frame and in 6 barrel weights. It was chambered for a great many rimmed cartridges, ranging in caliber from the .22 short rimfire through and including the .50 Eley center-fire. There was limited production in rimless calibers, including 7 mm. Mauser, 7.65 mm. Mauser, and .30-'06. This dropping-block action was also used for a 20-ga. shotgun first made in 1914 and

the shotgun was offered in both solid-frame and take-down styles.

The actions of Winchester single-shot rifles were casehardened in colors until August 1901, but those manufactured in following years were heat-treated and given a blued finish. Color case-hardening was obtainable on special order following institution of the improved heat-treatment method. The Winchester firm would at one time re-heat-treat the older casehardened actions, but this service is no longer offered by that company.

Plain triggers were standard on most versions of this rifle, but set triggers could be furnished on special order.

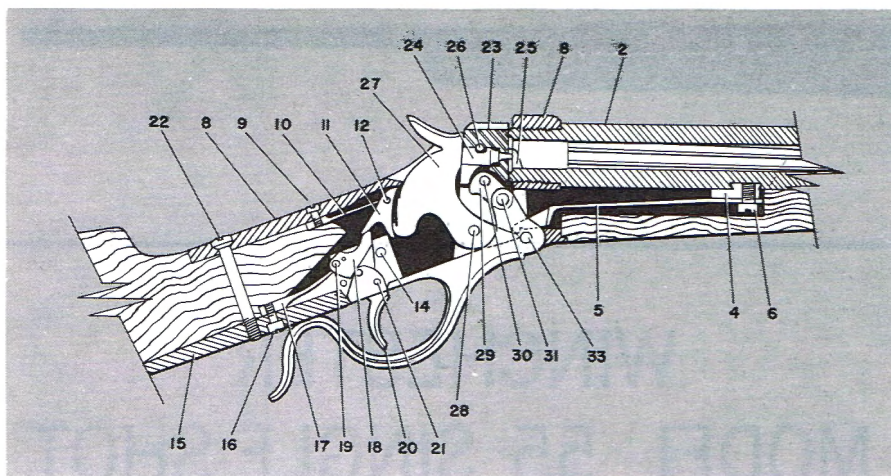
The single-shot rifle in takedown version was first offered in 1910. The development of this system necessitated a change in the design of the mainspring. The flat mainspring of the solid-frame rifle was attached to a base on the barrel, but in the takedown type the mainspring of music wire was fitted around the hammer assembly. This latter action is commonly called the coiled-spring type, and it eventually became



## Parts Legend

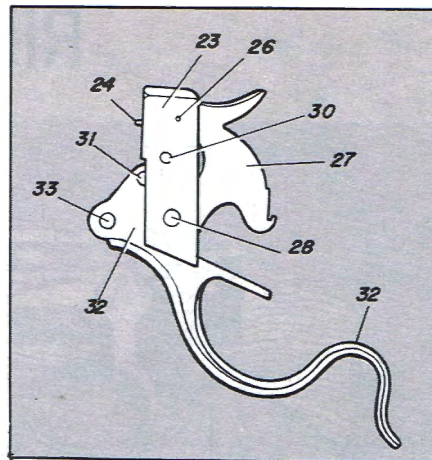
1. Front sight
  2. Barrel
  3. Rear sight
  4. Mainspring base
  5. Mainspring
  6. Mainspring screw
  7. Forearm screw
  8. Receiver
  9. Sear spring screw
  10. Sear spring
  11. Sear
  12. Sear pin
  13. Lower tang screw
  14. Side tang screws (2)
  15. Tang
  16. Knock-off spring screw
  17. Knock-off spring
  18. Knock-off
  19. Knock-off pin
  20. Trigger
  21. Trigger pin
  22. Upper tang screw
  23. Breechblock
  24. Firing pin
  25. Extractor
  26. Firing pin stop pin
  27. Hammer
  28. Hammer pin
  29. Link
  30. Link pin, long
  31. Link pin, short
  32. Finger lever
  33. Finger lever pin
  34. Finger lever pin stop screw
  35. Buttplate
  36. Buttplate screws (2)
- Note—Buttstock and forearm not shown.





1 The cutaway section of the rifle shows all parts assembled properly.

2 To reassemble breechblock (23), hammer (27), and finger lever (32) in receiver, place them assembled in the position shown and push them partly into position from underside of receiver. Replace extractor (25) in receiver and push breechblock, hammer, and finger lever up into position, aligning front hole of finger lever with its corresponding hole in receiver. Replace finger lever pin (33) and tighten finger lever pin stop screw (34).



standard for both takedown and solid-frame rifles.

The final version of the Winchester single-shot rifle was the Model 87 musket introduced in 1918 in cal. .22 rim-fire. Large numbers of this model were purchased by the U. S. government for troop training purposes during World War I and were later issued to shooting clubs through the Director of Civilian Marksmanship. This rifle was the first of the series to be given a model number. Until that time this basic rifle was merely listed as the Winchester Single Shot, without the customary model number applied to other Winchester rifles and shotguns.

### Browning patent

The design of the Winchester single-shot rifle was based upon a patent granted to John M. Browning in 1879. The Browning firm produced nearly 600 of these rifles in their Ogden, Utah, shop, but sold the manufacturing and sales rights to the Winchester firm in 1883. Winchester engineers made only minor design changes in tooling up for its manufacture.

### Disassembly Procedure

Drop finger lever (32) and check action to be sure rifle is not loaded. Unscrew forearm screw (7) and remove wood forearm to expose mainspring (5). Unscrew mainspring screw (6) and remove mainspring. Loosen finger lever pin stop screw (34) and drift out finger lever pin (33) with a suitable punch. Pull breechblock (23) with firing pin (24) and hammer (27) attached out bottom of receiver by finger lever (32). Extractor (25) will drop out bottom of receiver after removing breechblock. Above parts may all be separated by drifting out their respective pins.

To disassemble trigger mechanism, unscrew upper and lower tang screws (22 & 13) and remove buttstock to rear. Unscrew side tang screws (14) from left and right sides of receiver and remove tang (15). Remove knock-off spring screw (16) from underside of tang and remove knock-off spring (17). Trigger (20) and knock-off (18) can be removed by drifting out their respective retaining pins (21 & 19). Unscrew sear spring screw (9) from top of receiver tang and drop out sear spring (10). Drift out sear pin (12) and remove sear (11) from receiver. Reassemble in reverse (see Fig. 2).

## A MAN TO REMEMBER

OLIVER F.  
WINCHESTER

*First a shirt  
manufacturer*



Born—Boston, Mass.,  
Nov. 30, 1810

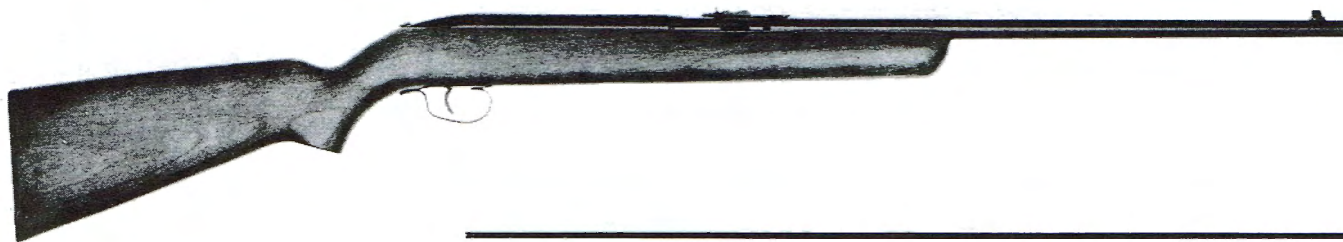
Died—New Haven, Conn.,  
Dec. 11, 1880

OF all the famous manufacturers connected with the American arms industry, probably none personally knew less about guns than Oliver Winchester. As a youth he worked on farms, learned the carpenter's and joiner's trade, and clerked in stores. Entering the dry goods and clothing business in Baltimore, he soon became a jobber and importer in New York City. There he and his partner invented a new process for shirt manufacture which Winchester patented in 1848 and which soon amassed a considerable fortune for the two men.

Winchester's connection with the firearms business began with his speculative purchase of stock in the Volcanic Arms Co. By 1856 he had purchased enough stock to become the principal owner, and in 1857 he was made president of the company. For several years the company manufactured both rifles and pistols, and then settled on a repeating rifle designed by B. Tyler Henry which was the direct forerunner of all the later Winchester lever-action repeating rifles.

The Henry and Winchester rifles brought financial success to the firearms branch of the firm. In 1870 Winchester bought out the Spencer Repeating Rifle Co., his chief competitor. In 1876 he purchased the invention of Benjamin B. Hotchkiss for a bolt-action rifle, and in 1879 he purchased the mechanism invented by John M. Browning for a single-shot rifle. This gun, however, was not produced until after Winchester's death the next year at the age of 70.—HAROLD L. PETERSON





By JAMES M. TRIGGS

THE Winchester Model 55 single-shot rifle introduced in 1958 is chambered for the .22 short, long, and long rifle rimfire cartridges. It was made in 22" barrel length only. Weight is 5½ lbs. Its blowback-operated action is designed to fire from open bolt position.

The action is cocked by retracting the action slide on the right side of the receiver. A cartridge is then inserted in the breech by pressing the bullet nose against the hinged plastic loading chute in the top of the receiver and chambering the round with the finger tip until the rim engages the extractor. The loading chute then rises into closed position. The act of loading automatically engages the safety. Disengagement of the safety readies the gun for firing.

When the trigger is pulled the bolt moves forward, firing the cartridge. The empty case is ejected through the bottom of the receiver as the bolt recoils to the rear or cocked position. After reloading and disengaging the safety, the gun is again ready to fire.

The Winchester Model 55 rifle was discontinued in 1961.

### Disassembly Procedure

Check action to be sure rifle is unloaded. Cock rifle and put safety (20) in "safe" position. Loosen stock stud screw (32) in underside of stock and lift the barrel (5) and the receiver (1) assembly out of the stock.

Drift out barrel locating pin (4) and slide barrel (5) out of receiver to front. Drift out cover pin (3), depress cover (2), and remove from receiver.

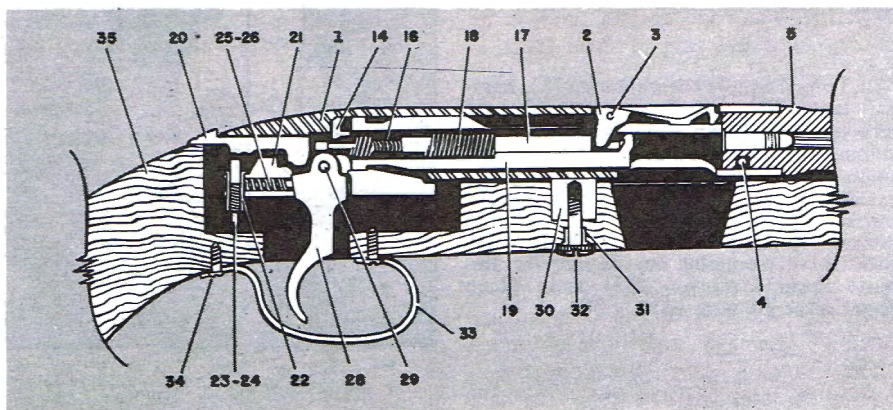
Place front end of receiver against a flat wood surface, release safety (20), and pull trigger. Exercise care to keep fingers clear of receiver openings during this operation. Draw bolt out of receiver to front.

In reassembling, replace bolt in receiver and push all the way in until it catches. Place safety in "safe" position. Replace cover in top loading port of receiver with front end first and foot of cover in groove of bolt, sliding backward until the front end of cover is flush with the receiver. Replace the cover pin.

Replace barrel in receiver and replace barrel locating pin. Replace barrel and receiver assembly in stock and tighten the stock stud screw.

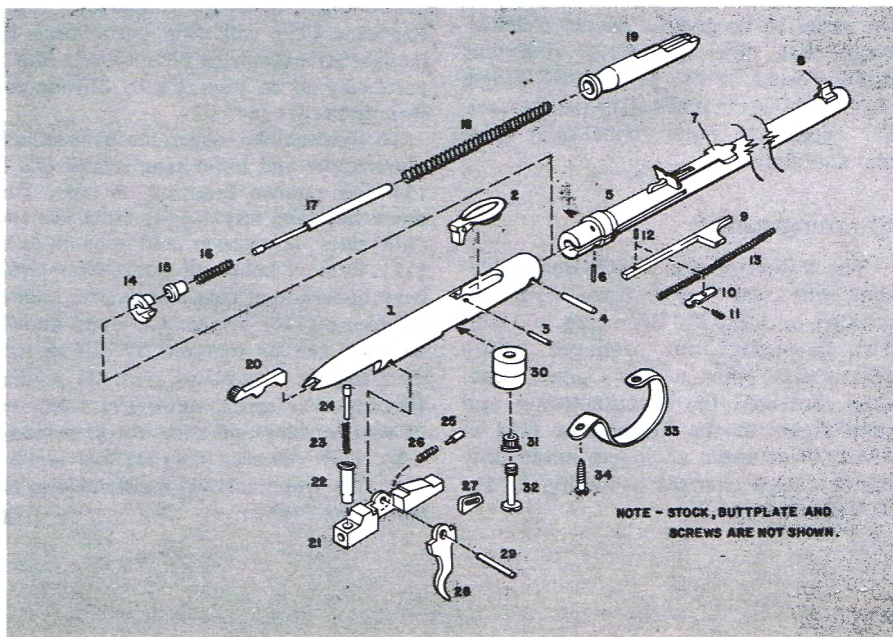
Trigger mechanism may be disassembled if necessary by drifting out trigger pin (29), taking care not to allow springs (23 & 26) to escape forcibly. ■

## WINCHESTER MODEL 55 SINGLE-SHOT RIFLE



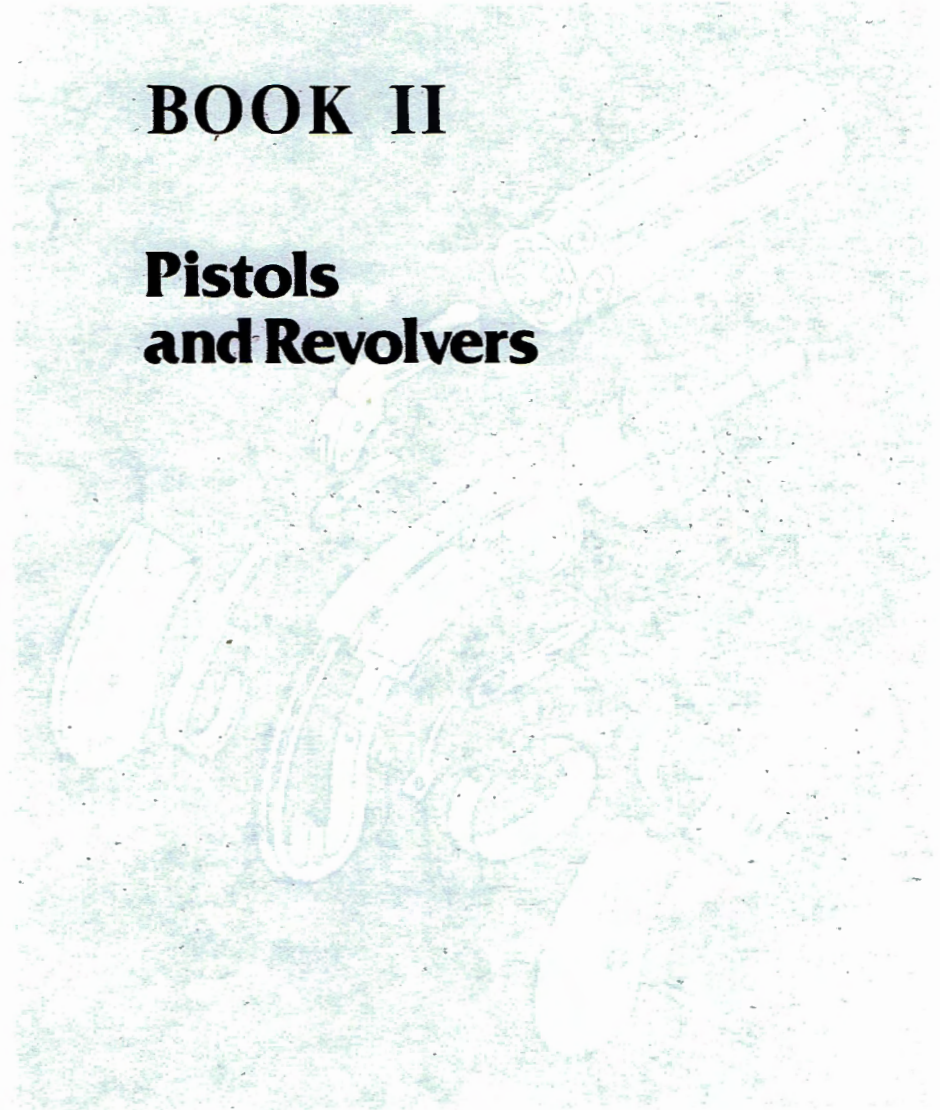
### Parts Legend

- |                          |                         |                            |
|--------------------------|-------------------------|----------------------------|
| 1. Receiver              | 11. Extractor spring    | 23. Safety plunger spring  |
| 2. Cover                 | 12. Extractor pin       | 24. Safety plunger         |
| 3. Cover pin             | 13. Action slide spring | 25. Trigger spring plunger |
| 4. Barrel locating pin   | 14. Buffer washer       | 26. Trigger spring         |
| 5. Barrel                | 15. Washer              | 27. Trigger top            |
| 6. Action slide stop pin | 16. Safety rod spring   | 28. Trigger                |
| 7. Rear sight            | 17. Safety rod          | 29. Trigger pin            |
| 8. Front sight           | 18. Mainspring          | 30. Receiver stud          |
| 9. Action slide          | 19. Bolt                | 31. Escutcheon             |
| 10. Extractor            | 20. Safety              | 32. Stock stud screw       |
|                          | 21. Sear                | 33. Guard                  |
|                          | 22. Sleeve              | 34. Guard bow screws (2)   |





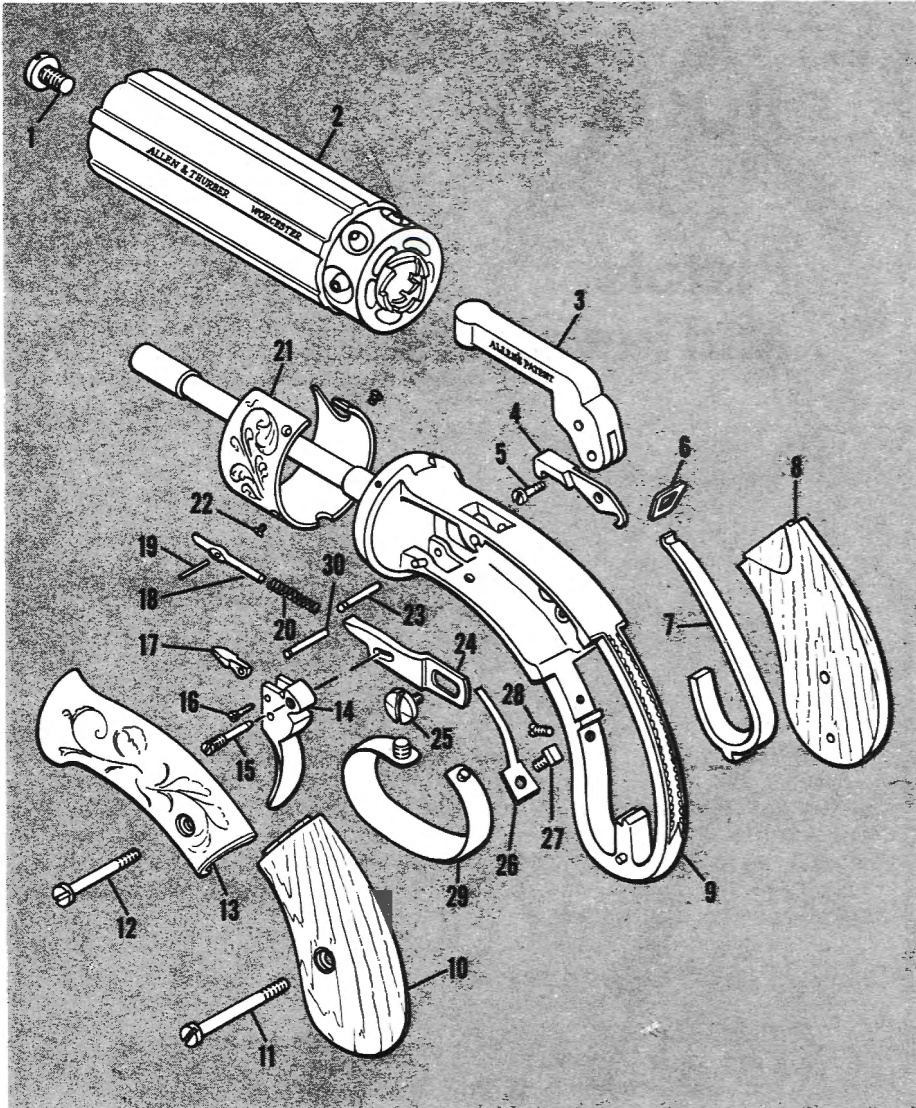
# Pistols and Revolvers



7



# ALLEN AND THURBER PEPPERBOX



## PARTS LEGEND

- |                           |                          |                              |
|---------------------------|--------------------------|------------------------------|
| 1. Barrel retaining screw | 11. Grip screw           | 21. Nipple shield            |
| 2. Barrel group           | 12. Side-plate screw     | 22. Shield screws            |
| 3. Hammer                 | 13. Side-plate           | 23. Trigger pin              |
| 4. Sear                   | 14. Trigger              | 24. Hand                     |
| 5. Sear screw             | 15. Hand operating pin   | 25. Hand retaining screw     |
| 6. Mainspring link        | 16. Barrel latch screw   | 26. Hand spring              |
| 7. Mainspring             | 17. Barrel latch         | 27. Spring retaining screw   |
| 8. Right grip             | 18. Detent pin           | 28. Mainspring tension screw |
| 9. Frame                  | 19. Detent retaining pin | 29. Trigger guard            |
| 10. Left grip             | 20. Detent spring        | 30. Hammer pin               |

THE pepperbox pistol holds a unique position in American firearms history. It bridged the gap between the single-shot pistol and the revolver with stationary barrel. Pepperbox guns were handy, fairly reliable, and supplied a series of quick shots. They proved popular and were carried West in great numbers during the gold rush era.

While there were flintlock pepperboxes, they were clumsy and expensive. The common pepperbox, as we know it today, came about after development of the percussion cap.

Ethan Allen saw the possibilities of a percussion pepperbox and in 1834 patented his self-cocking gun. A few years later, with the aid of his brother-in-law, he founded the Allen and Thurber Gun Co. They made guns from 1837 to 1842 in Grafton, Mass. In 1842 they moved to Norwich, Conn. Then in 1855 they moved back to Massachusetts and settled in Worcester. During all these moves, a steady flow of pepperboxes were turned out. A wide variety of models was offered. The barrels ranged from 2½" to 5½" in length and in calibers from .28 to .36.

Allen and Thurber guns were well made. The barrels were bored from a block of cast steel. The frame was also cast. Operating parts were machined from bar stock and hardened where necessary. Walnut was used for the grips in most cases and the frames were generally scroll engraved.

The self-cocking lock mechanism was unique for its time. It is fairly simple and contains a minimum number of parts. Lack of shielding between the caps in some of the earlier pepperboxes resulted in occasional multiple discharges. Allen overcame this by putting a snug-fitting shield around the nipple area which kept the caps in place and also helped keep the sparks from igniting the other loaded barrels.

The revolver, with its fixed rifled barrel and compact design, to say nothing of its reduced weight, soon overshadowed the pepperbox design. The invention of the metallic cartridge gave the pepperbox its final kiss of death, since it was impractical to try to convert a pepperbox to fire fixed ammunition.





By EDWARD J. HOFFSCHMIDT

## A MAN TO REMEMBER

ETHAN ALLEN

*He brought pepperbox to its highest development*

*Born—Bellingham, Mass.,*

*Sept. 2, 1808*

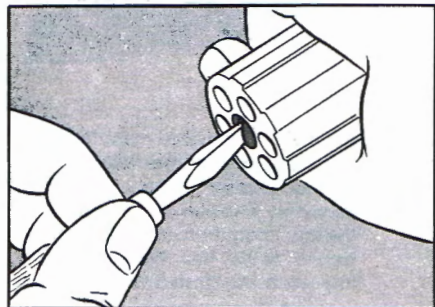
*Died—Jan. 7, 1871*

ALTHOUGH he was probably no relation of the famous Revolutionary War hero of the same name, Ethan Allen came from an old New England family, and all his business ventures were family affairs. His first partnership was with his brother-in-law Charles Thurber. Thomas P. Wheelock of Allen & Wheelock was another brother-in-law. After Wheelock's death in 1864, 2 of Allen's sons-in-law, S. Forehand and H. C. Wadsworth, were admitted to the firm.

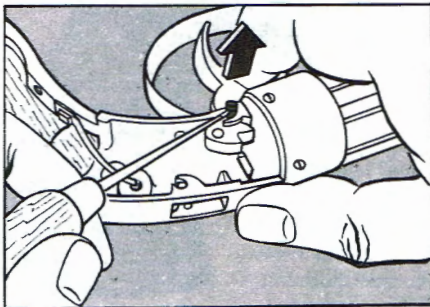
After leaving Bellingham, Allen first set himself up as a gunsmith in Grafton. There he formed the firm of Allen & Thurber, making pistols, especially pepperboxes. In 1842 the firm moved to Norwich, Conn., and in 1847 to Worcester, Mass. In 1856 Thurber retired, and the firm name was changed to Allen & Wheelock; then, after Wheelock's death, it became Ethan Allen & Co. in late 1864 or early 1865.

Allen was concerned with the manufacture of many different kinds of guns, including single-shot pistols, double-barrel pistols, and rifles, but it was his pepperboxes that brought him fame. Allen's first patent was granted in 1837 for a double-action lock. Actually this patent described a single-shot weapon, but as applied to a pepperbox a single pull on the trigger cocked the hammer, revolved the barrels, and fired the gun. It made the Allen pepperbox the fastest firing weapon of its day. For over a decade it was far better known and more popular than the Colt revolver. In 1845 Allen was granted a second patent covering an improved mechanism for rotating the barrels of a pepperbox and a device which would enable the gun to be fired either single- or double-action. By that time, however, the days of the pepperbox were numbered. Gradually the lighter and more accurate revolver supplanted it in popularity, and after Allen's death the firm dropped the pepperbox in favor of that weapon.

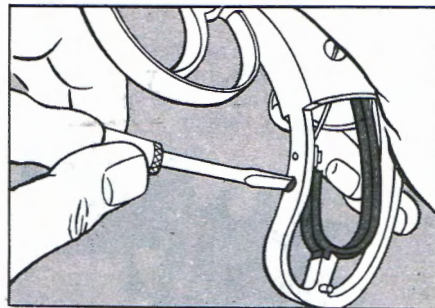
Ethan Allen's life spanned the entire percussion period. At the time of his death his firm was manufacturing a full line of cartridge guns. It had been a unique enterprise, too, in being the largest American 19th century arms manufactory catering entirely to the sporting trade and the citizenry of the country without ever having the support of a government contract for military arms.—HAROLD L. PETERSON



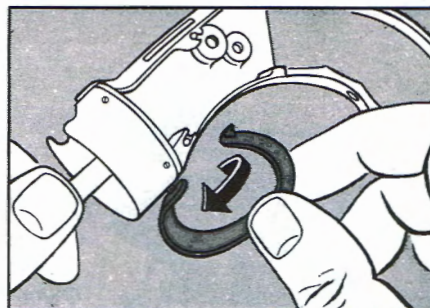
**1** The Allen and Thurber pepperbox barrel group rotates around a central pin fixed to the frame. To remove the barrel group, remove the barrel retaining screw (1) and pull the trigger until the hammer just clears the nipple. Then pull barrel group forward off pin. Use a good grade of penetrating oil on all the screw heads and threads.



**3** There are only 2 hinge pins (23 and 30) in the entire gun, one retaining the trigger, the other retaining the hammer. Since both of these pins are blind pins and do not extend through the frame, a notch was cut in the frame and an undercut was machined into the pins. If a thin screwdriver or pick is inserted as shown, the pins can be easily pried out.



**2** The trigger pull can be adjusted to a certain extent by loosening or tightening the mainspring tension screw (28). When this screw is removed, the mainspring (7) can be pushed out of its seat in the frame and lifted free.



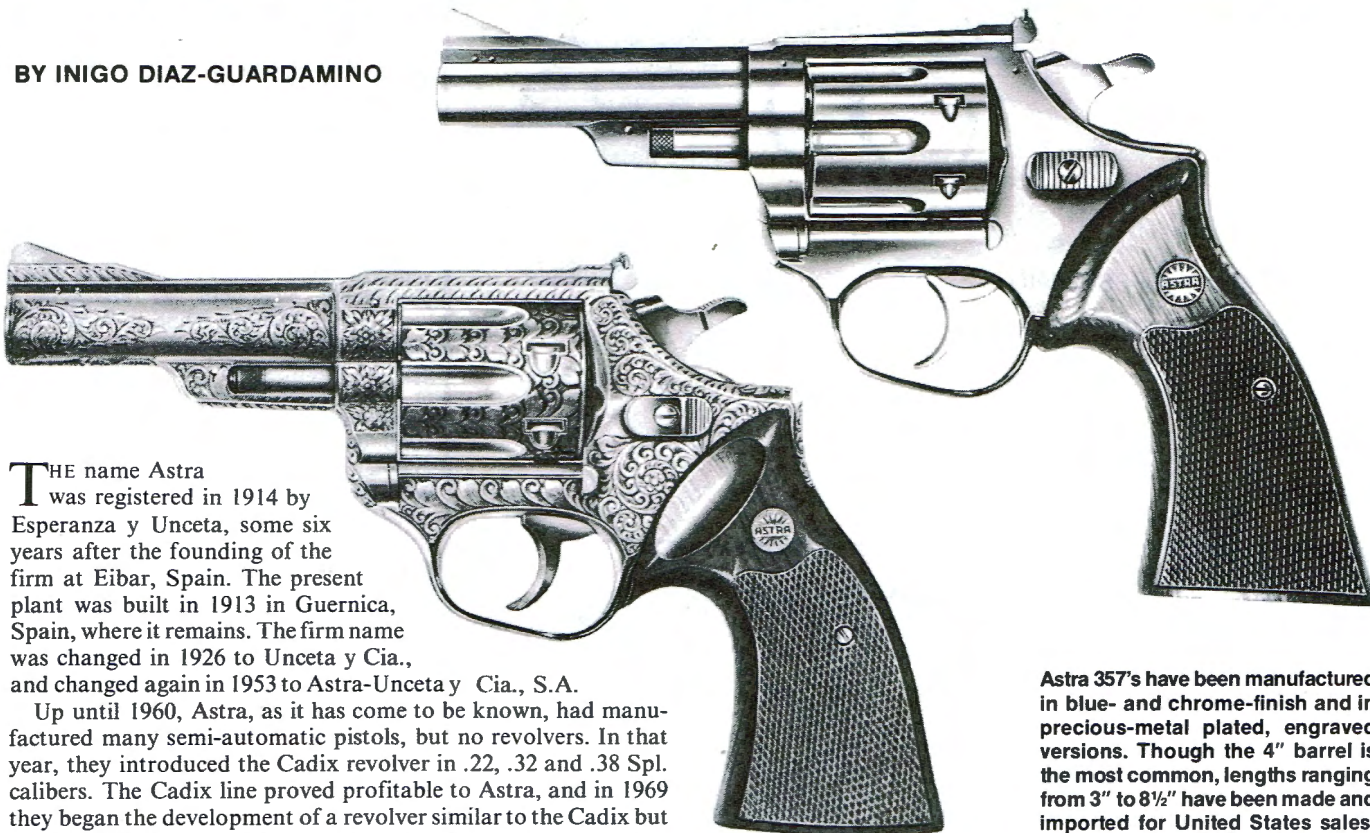
**4** Once the side-plate has been removed, internal parts can be easily unscrewed and removed. To remove the trigger guard (29), push rear of the guard forward and pull down on it slightly. When it comes free of the frame, unscrew as shown. ■



## Exploded views:

# ASTRA 357 REVOLVER

BY INIGO DIAZ-GUARDAMINO



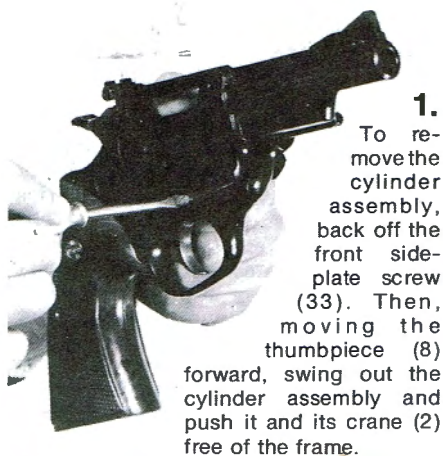
**T**HE name Astra was registered in 1914 by Esperanza y Unceta, some six years after the founding of the firm at Eibar, Spain. The present plant was built in 1913 in Guernica, Spain, where it remains. The firm name was changed in 1926 to Unceta y Cia., and changed again in 1953 to Astra-Unceta y Cia., S.A.

Up until 1960, Astra, as it has come to be known, had manufactured many semi-automatic pistols, but no revolvers. In that year, they introduced the Cadix revolver in .22, .32 and .38 Spl. calibers. The Cadix line proved profitable to Astra, and in 1969 they began the development of a revolver similar to the Cadix but built on a medium-sized frame to handle the .357 Mag. cartridge. Initial deliveries were made in September of 1971. Like the Cadix, the Astra 357 is similar in its internal construction to the modern Smith & Wesson revolver. Internally, the most significant difference is the coiled, music wire mainspring which, around its strut, impinges on an internal ring in the butt of the revolver. This ring has four annular holes which are counterbored to varying depths. The ring can be turned manually after the removal of the grips and mainspring assembly, so that different trigger pull weights can be achieved.

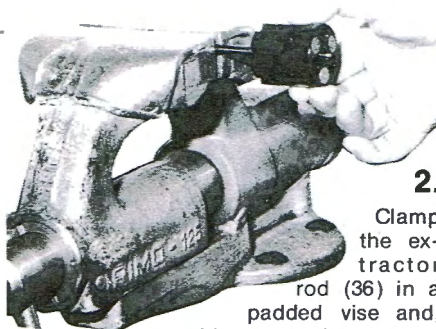
In 1971, the 357 was available with 3", 4" or 6" barrel lengths, and in 1976 an 8½" barreled version was introduced.

Astra 357's have been manufactured in blue- and chrome-finish and in precious-metal plated, engraved versions. Though the 4" barrel is the most common, lengths ranging from 3" to 8½" have been made and imported for United States sales.

By mid-1979, approximately 55,000 357s had been made and sold in blue, chrome, and engraved versions. Current plans call for the introduction of the 4" barrel version in stainless steel in the very near future. In addition to the 55,000 unit quantity, over 16,000 similar guns in .38 Spl. caliber have been produced, but are seldom encountered in the United States. The standard version of the .38 Spl. gun is termed the Model 960, and a single-action version with screw-adjustable trigger, designed for competitive shooting, is termed the Match Model. ■

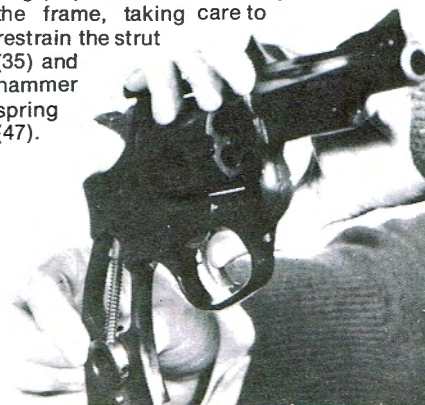


**1.** To remove the cylinder assembly, back off the front side-plate screw (33). Then, moving the thumbpiece (8) forward, swing out the cylinder assembly and push it and its crane (2) free of the frame.

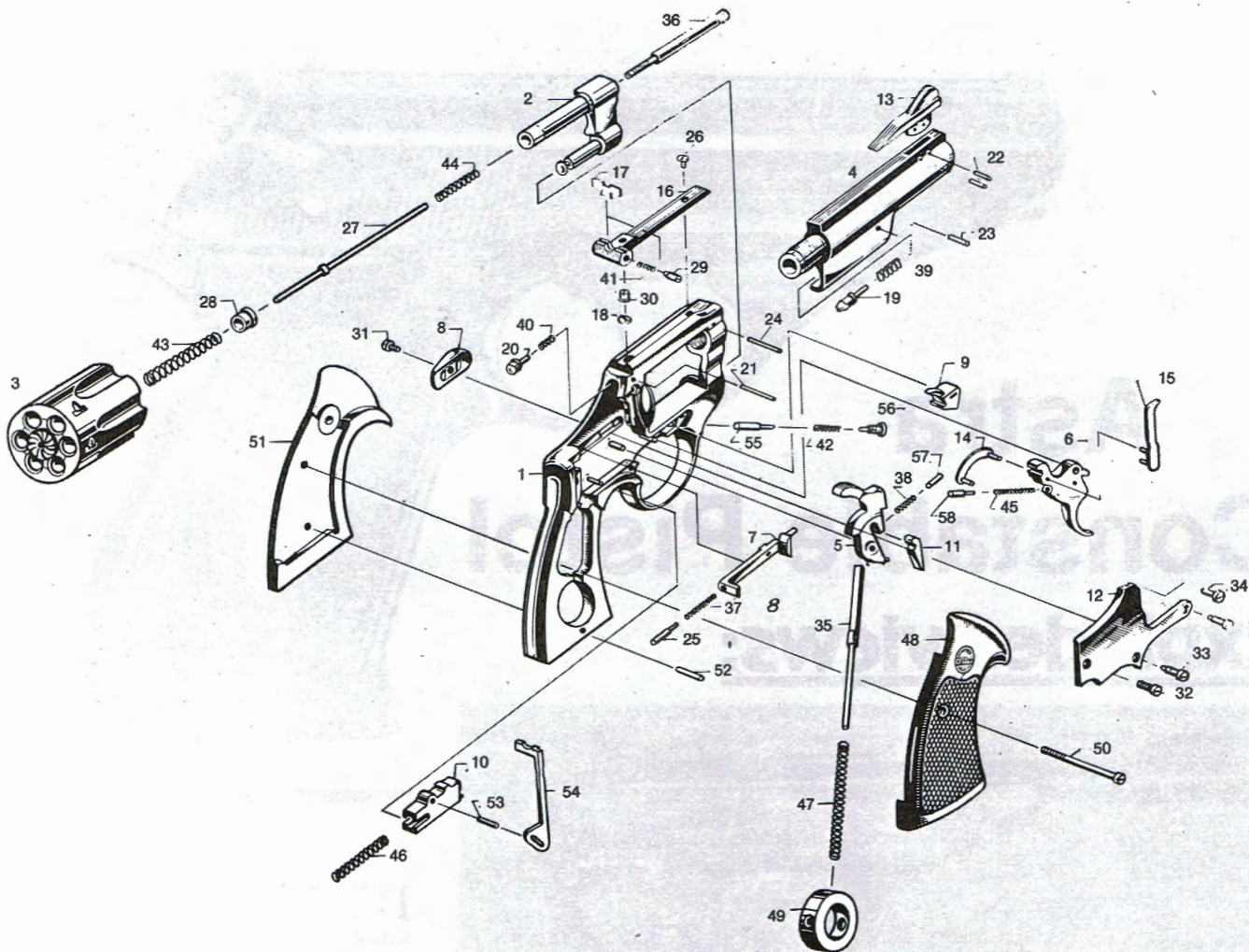


**2.** Clamp the extractor rod (36) in a padded vise and, with two or three empty cartridge cases in the chambers to prevent damage to the extractor and its guide pins, turn the cylinder clockwise to free it from the extractor rod.

**3.** Once the grips are removed, and before taking off the sideplate, grasp the regulating ring (49) and move it sideways from the frame, taking care to restrain the strut (35) and hammer spring (47).







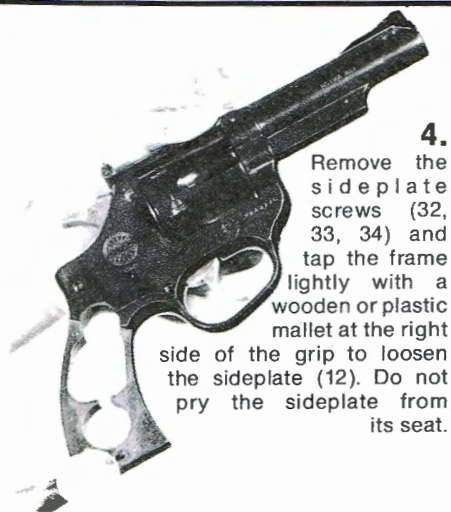
#### Parts Legend

1. Frame
2. Crane
3. Cylinder with extractor and pins
4. Barrel
5. Hammer
6. Trigger
7. Bolt
8. Thumbpiece
9. Cylinder stop
10. Rebound slide
11. Sear
12. Slideplate
13. Front sight
14. Trigger lever

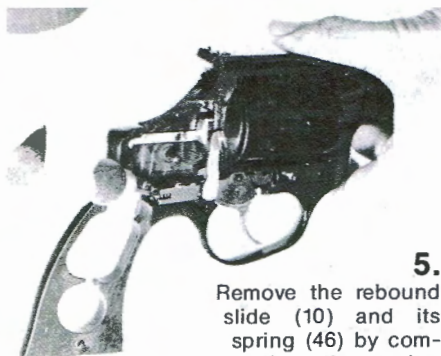
15. Hand
16. Rear sight leaf
17. Sight slide
18. Rear sight elevator
19. Locking bolt
20. Firing pin
21. Firing pin retaining pin
22. Front sight pin (2)
23. Locking bolt pin
24. Barrel pin
25. Bolt plunger
26. Sight leaf screw
27. Cylinder pin
28. Extractor rod collar
29. Windage screw

30. Elevator screw
31. Thumbpiece screw
32. Flat head sideplate screw
33. Front & lower sideplate screw (2)
34. Top sideplate screw
35. Hammer strut
36. Extractor rod
37. Bolt spring
38. Sear spring
39. Locking bolt spring
40. Firing pin spring
41. Sight slide spring
42. Cylinder stop spring
43. Extractor spring

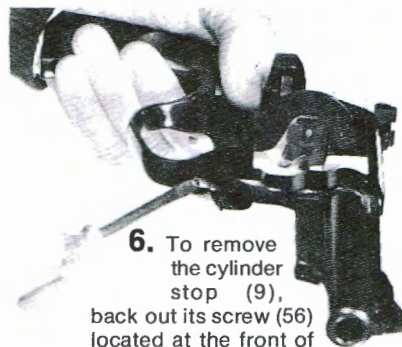
44. Center pin spring
45. Hand torsion spring
46. Rebound slide spring
47. Hammer spring
48. Right grip
49. Regulating ring
50. Grip screw
51. Left grip
52. Grip pin
53. Safety pin
54. Safety
55. Cylinder stop plunger
56. Cylinder stop screw
57. Sear plunger
58. Hand plunger



**4.** Remove the sideplate screws (32, 33, 34) and tap the frame lightly with a wooden or plastic mallet at the right side of the grip to loosen the sideplate (12). Do not pry the sideplate from its seat.



**5.** Remove the rebound slide (10) and its spring (46) by compressing the spring with a screwdriver while lifting up on the rebound slide and pulling it off the fixed frame pin. Take care that the rebound slide spring is not lost, by keeping a cloth over the gun to trap the spring and prevent injury.



**6.** To remove the cylinder stop (9), back out its screw (56) located at the front of the frame and remove the cylinder stop spring (42) and the cylinder stop plunger (55). With a screwdriver, push the narrow side of the cylinder stop to force it out of the frame. Reassemble in reverse order.



# Astra Constable Pistol

## EXPLODED VIEWS:



BY NRA TECHNICAL STAFF



Though appearing to have a double-action trigger, the Astra Constable Sport model is a single-action version made in .22 cal. only and equipped with a removable barrel counterweight. The Sport model is virtually unknown in the U.S.



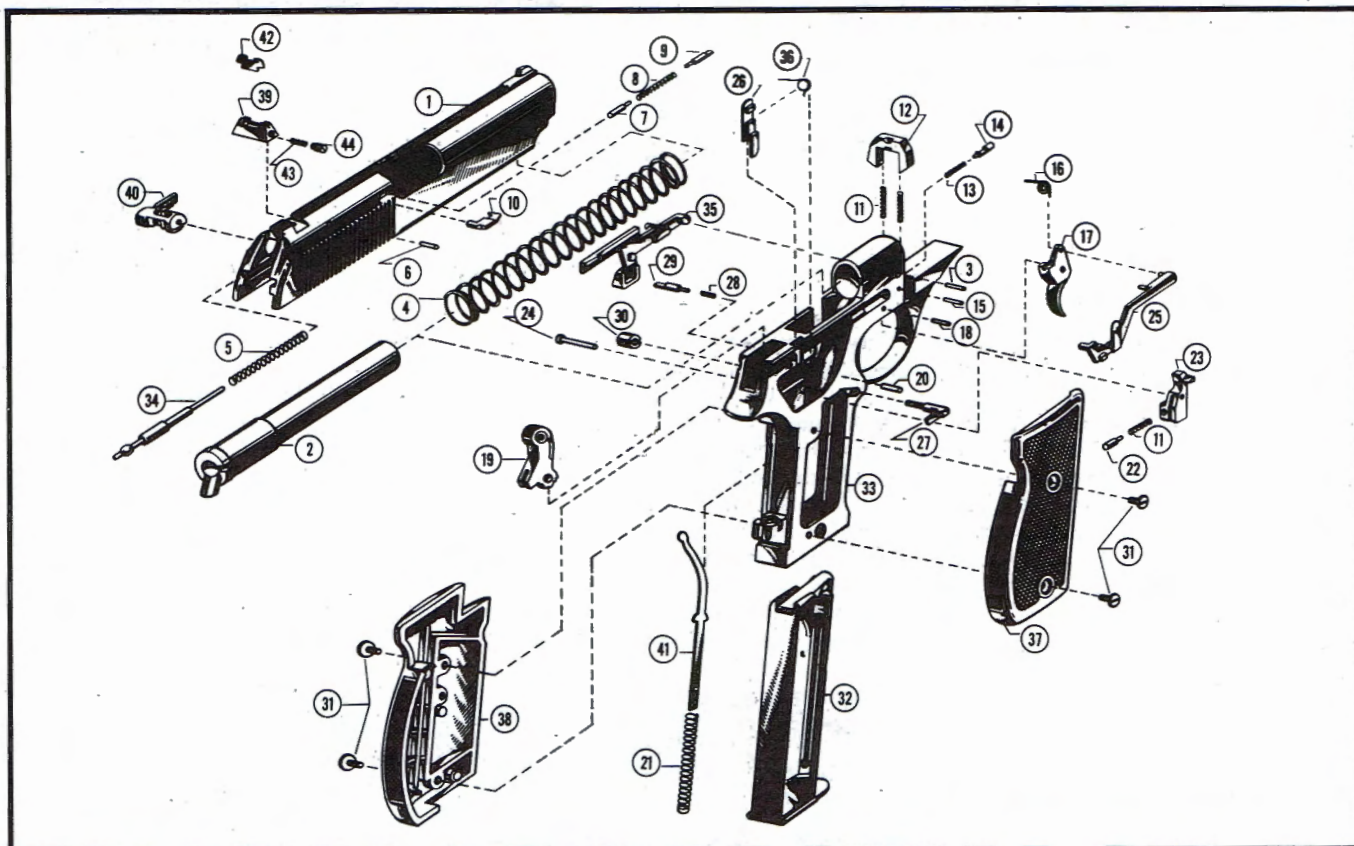
Usually the Constable is encountered in blue finish with plastic grips. Some versions have been imported with wooden grips and chrome, chrome engraved and other deluxe finishes. Two grip screws on each side indicate later production.

IN the mid-1960s, Astra began the development of their first double-action semi-automatic pistol. It was not until 1970 that the first production models were shipped to the United States.

These original pistols in calibers .32, .380, and .22 long rifle were all equipped with plastic grips affixed with a single screw on each side and an integral thumb shelf on the left side. Early guns also had fixed rear sights and positive firing pins. The positive firing pin meant that if the pistol, with chamber loaded, were to be carried with the hammer fully down and the safety "off," the firing pin would impinge on the cartridge primer. The proper method of carrying the pistol, then, was with the hammer down and thumb safety engaged.

Later pistols were equipped with flat plastic grips lacking the thumbrest but affixed with two screws on each side and a rear sight adjustable for windage. Still later, positive firing pins were changed to firing pins of the inertia type, making it safer to carry gun with loaded chamber with the safety either in "on" or "off" position. This change in the firing pin was accompanied by minor changes to the safety, the disconnect and the slide retainer. The firing pin change took place in the .380 and .32 calibers at Serial No. 1091101, and in the .22 calibers at Serial No.





1140551. Since that time the Constable, now imported by Interarms of Alexandria, Va., has undergone no major changes except that now the .22 and .380 calibers only are being imported, the .32 cal. having been dropped.

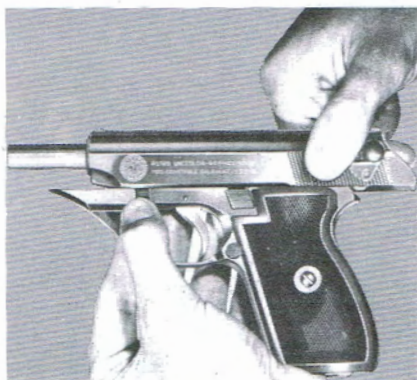
The compact Astra Constables are, like other Astra products, of good quality and are well finished throughout. At various times they have been offered in blue, chrome and chrome-engraved finishes. The Constable Sport model in 22 long rifle only is equipped with a 6" barrel, adjustable sights for windage and elevation, and a barrel counterweight. It is made in single-action version only, and at this writing has not been imported into the U. S. in any quantity.

#### Field Stripping Instructions:

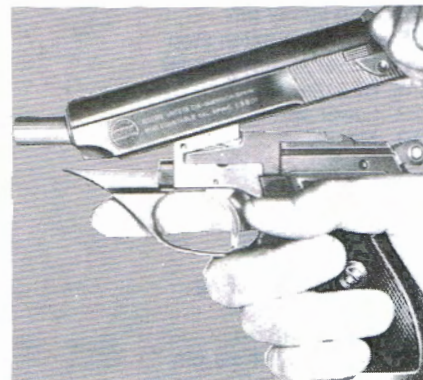
Depress the magazine catch button (30) and remove the magazine (32) from the pistol. Retract the slide (1) and release it after checking that the chamber is empty. Leave the hammer (19) at full-cock position. With the thumb and index finger of the lefthand, pull down the takedown latch (12) located in front of the trigger, and with the right hand pull the slide fully to the rear. The slide may then be lifted and removed from the frame (33). This is all that is necessary to clean and lubricate the pistol. Further takedown is not recommended by the factory. ■

#### Parts Legend

1.	Slide	15.	Takedown plunger pin	30.	Magazine catch button
2.	Barrel	16.	Trigger spring	31.	Grips screws
3.	Barrel pin	17.	Trigger	32.	Magazine complete
4.	Recoil spring	18.	Trigger pin	33.	Frame
5.	Firing pin spring	19.	Hammer	34.	Firing pin
6.	Firing pin retainer	20.	Hammer pin	35.	Slide retainer
7.	Safety plunger	21.	Main spring	36.	Disconnecter spring
8.	Extractor spring	22.	Sear plunger	37.	Right grip
9.	Extractor retainer	23.	Sear	38.	Left grip
10.	Extractor	24.	Sear pin	39.	Rear sight
11.	Sear spring and takedown yoke spring	25.	Sear bar	40.	Thumb safety
12.	Takedown yoke	26.	Disconnecter	41.	Hammer strut
13.	Takedown plunger spring	27.	Magazine catch	42.	Sight slide
14.	Takedown plunger	28.	Magazine catch spring	43.	Sight slide spring
		29.	Magazine button plunger	44.	Windage screw



Remove the magazine and cock the hammer. Pull down the latch located in front of trigger and pull the slide fully to the rear.



With the slide now fully retracted it may be lifted and removed from the frame. Further disassembly is not recommended.



# Astra Models 400 and 600 Pistols



By E. J. HOFFSCHMIDT

**T**HE Spanish-made Astra Model 400 (Model 1921) semi-automatic pistol is a blowback-operated arm. That is, the breech is not locked in firing. A locked breech is usually considered necessary to handle the more powerful 9 mm. loads, but in the Model 400 pistol the opening of the breech is delayed through the use of a heavy slide and a powerful recoil spring.

The standard Astra Model 400 pistol will fire either the 9 mm. Largo (9 mm.

Bergmann) cartridge or the .38 Automatic Colt Pistol cartridge.

During World War II the German Army obtained the Astra pistol in cal. 9 mm. Parabellum (9 mm. Luger). This gun is known as the Model 600 and has the inscription "PIST. PATR. 08" stamped on the barrel opposite the ejection port in the slide. Model 600 pistols used by the German Army have the German Ordnance acceptance mark on the right side of the grip overhang. After

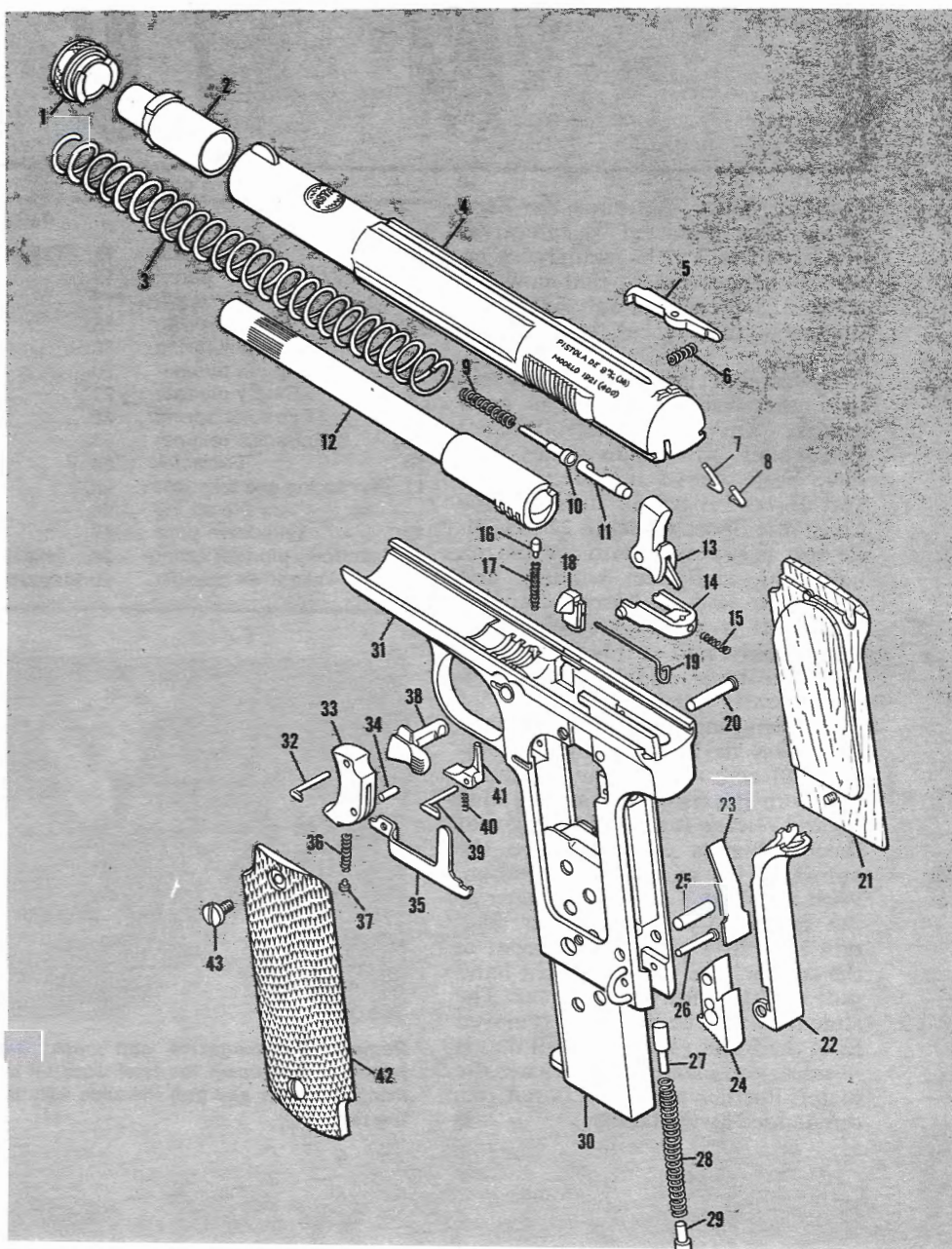
World War II, 14,000 Model 600 pistols were sold to West Germany for police use. It is also offered commercially.

There are several safety features in the Models 400 and 600 pistols. A thumb safety locks the trigger and slide, and a grip safety locks the sear. A magazine safety blocks the trigger when the magazine is removed.

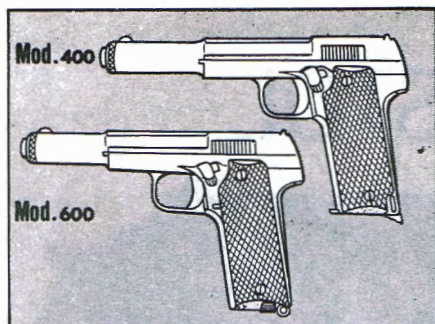
Disassembly procedures for the Models 400 and 600 pistols are essentially identical.

## Parts Legend

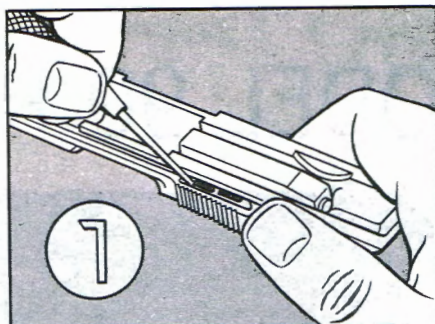
1. Barrel bushing lock
2. Barrel bushing
3. Recoil spring
4. Slide
5. Extractor
6. Extractor spring
7. Firing pin retainer pin
8. Extractor retainer pin
9. Firing pin spring
10. Firing pin
11. Firing pin extension
12. Barrel
13. Hammer
14. Sear
15. Sear spring
16. Safety catch detent
17. Detent spring
18. Slide stop
19. Slide stop spring
20. Hammer pin
21. Right grip
22. Grip safety
23. Grip safety spring
24. Magazine catch
25. Grip safety pin
26. Magazine catch stop
27. Upper spring plunger
28. Hammer spring
29. Lower spring plunger
30. Magazine
31. Frame
32. Trigger pin
33. Trigger
34. Trigger bar pin
35. Trigger bar
36. Trigger bar spring
37. Spring plunger
38. Safety catch
39. Magazine safety pin
40. Magazine safety spring
41. Magazine safety
42. Left grip
43. Grip screw (4)



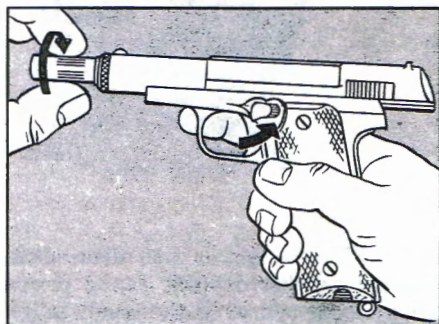




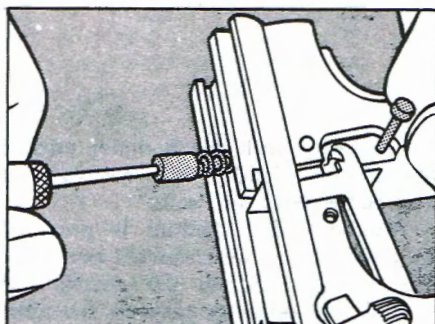
**1** Mechanically, the Models 400 and 600 are similar. The Model 600 is  $\frac{3}{4}$ " shorter. The front-to-back grip depth is less in the Model 600 because of the shorter cartridge it fires. Most parts are not interchangeable but the takedown sequence is similar.



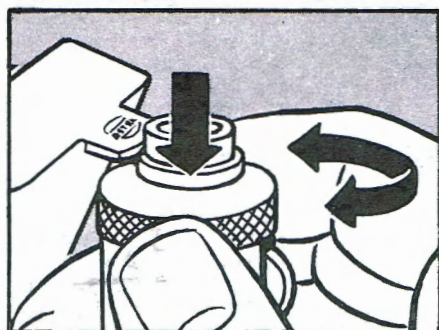
**4** L-shaped retainer pins (7 & 8) retain the extractor (5) and the firing pin extension (11). Remove pins by prying up with a small screwdriver or punch. When reassembling firing pin spring (9), firing pin (10), and firing pin extension (11), align cut-out on the firing pin extension before inserting the retainer pin (7).



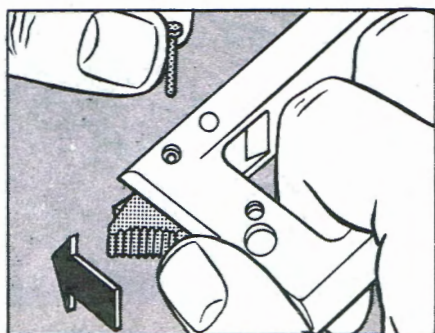
**2** To field strip for general cleaning, first clear chamber and remove magazine (30). Pull slide (4) to rear, then rotate safety catch (38) up as slide is moved forward until catch engages slide. Rotate barrel (12) as shown, until it is released from frame (31) and engaged with slide. Release safety catch and move barrel and slide forward off frame.



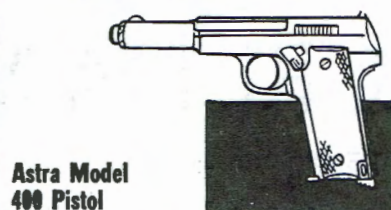
**5** Remove the 4 grip screws (43) and the grips (21 & 42). Replace magazine (30) in frame. Insert punch through hole in frame below trigger bar (35). Hold hammer (13) with thumb and pull trigger, allowing hammer to fall until upper plunger (27) stops against punch. Remove magazine. Drift out hammer pin (20) from left side and remove hammer. Hold upper plunger with drift and remove punch. Remove upper and lower plungers (27 & 29) and hammer spring (28). (Model 600 has no lower plunger.)



**3** To disassemble, first clear chamber and remove magazine. Place pistol, muzzle up, on table. Depress barrel bushing (2) with magazine floorplate or screwdriver. Turn barrel bushing lock (1) either way until it holds barrel bushing. Grip barrel bushing and lock firmly with both hands and turn lock about  $\frac{1}{4}$ -turn, releasing recoil spring (3). Remove recoil spring, bushing, and lock. Barrel and slide are removed from frame as in field stripping.



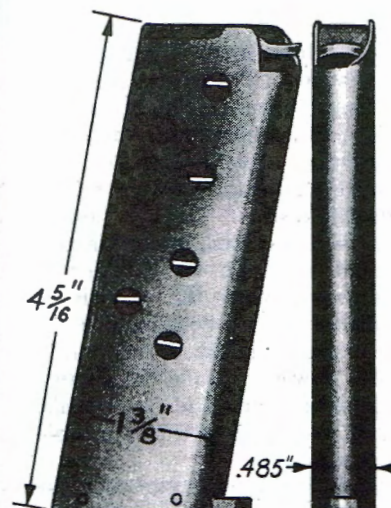
**6** Most Model 400 pistols have magazine catch as shown here. Remove magazine catch stop (26). Drift out grip safety pin (25), remove grip safety (22), and push out magazine catch (24) in direction indicated. It is unnecessary to remove side magazine catch on late Models 400 and 600 pistols.



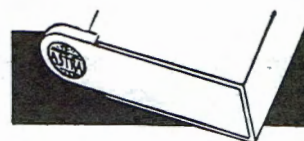
Astra Model 400 Pistol

## PISTOL MAGAZINES

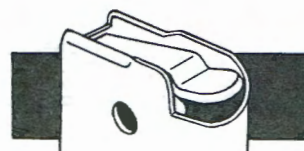
One of a series



The Astra Model 400 is a unique automatic pistol. It was designed to fire several different cartridges, including the 9 mm. Bergmann-Bayard and .38 Colt Automatic round. Of blowback type, this pistol has a strong recoil spring and a very heavy slide to resist the recoiling forces of powerful cartridges. Unlike some Spanish pistols, the Astras are well made and finished.



Model 400 magazines can generally be recognized by the uncommonly wide cross-section necessary to handle the long cartridges. The Astra trademark, but not the model number, will usually be found on the tip of the magazine floorplate.



The right side of the magazine is cut lower than the left. This allows the tip of the follower to operate the hold-open device that holds the slide back when the last shot has been fired.—EDWARD J. HOFFSCHMIDT



# BERETTA MODEL 90 PISTOL

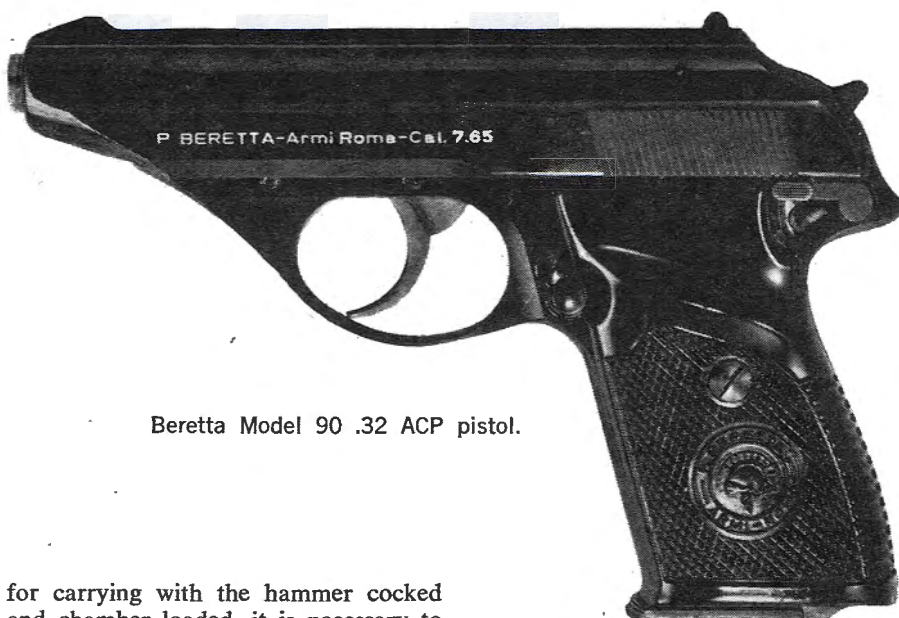
By DENNIS RIORDAN

**T**HE Beretta Model 90 automatic pistol is a typical modern pocket handgun. Produced in Italy by Beretta, this blowback-operated arm fires the 7.65 mm. (.32 ACP) cartridge and has an eight-round magazine detached by pressing a catch on the left of the frame.

Special features of this pistol are its double-action lock mechanism with rebounding hammer, lightweight-alloy frame, and stainless steel barrel. As in many other automatic pistols, the recoil spring surrounds the barrel, which is rigidly fastened to the frame. The hammer is exposed, and a manually-operated safety is on the upper left of the frame. When the safety is moved downward into fire position, a red warning dot on the frame is exposed. When pivoted upward on safe, the safety locks the hammer and slide. It can also be used as a manual slide lock to hold the slide open.

Due to its double-action lock mechanism and rebounding hammer, the Model 90 may be safely carried with the chamber loaded, hammer down, and safety disengaged. It can then be fired by simply pulling the trigger. This makes it possible to get the pistol into action quickly. Also, in the event of a misfire, additional blows on the firing pin can be given quickly by pulling the trigger.

The hammer is cocked automatically during firing. To make the pistol safe



Beretta Model 90 .32 ACP pistol.

for carrying with the hammer cocked and chamber loaded, it is necessary to engage the safety on "safe."

Another safety feature is provided by the extractor which serves as a loading indicator. When the chamber is loaded, the extractor projects from the slide and is easily seen and felt.

After the last round in the pistol is fired, the magazine follower pushes up the ejector which latches the slide open. This is a highly desirable feature.

The pistol has smooth, clean lines. This plus the black anodized finish on the frame, high-luster blue on the slide, and a satin-chrome finish on the trigger combine to give attractiveness.

Handling qualities are generally ex-

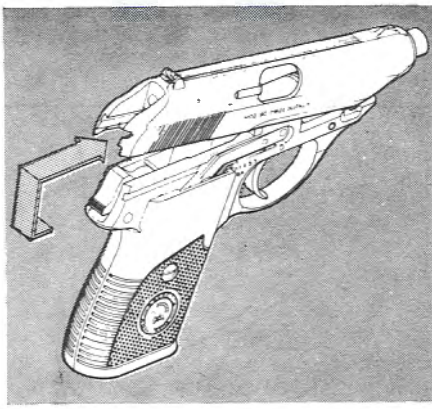
cellent. The weight is well distributed, and the checkered black Tenite plastic grips are shaped to fit the hand. Barrel length is 3 $\frac{3}{8}$ ", and overall length 6 $\frac{5}{8}$ ". Weight unloaded is 19 $\frac{1}{2}$  ozs.

The fixed square-notch rear and square-blade front sights are well suited for a pocket pistol. Sighting is aided by a wide flat rib integral with the top of the slide. Fine serrations on the rib give a dull non-reflective surface.

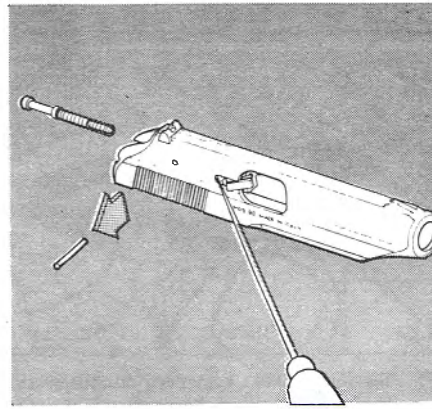
Well designed, simple, and reliable, this high-quality pistol is an excellent pocket arm. (Text by Ludwig Olson) ■



**1** To field-strip the Model 90, depress magazine catch (32), and withdraw and unload magazine. Disengage safety (38), and pull slide (4) fully to the rear to clear chamber. Replace magazine and draw slide rearward until it locks open. Grasp serrated fingerpieces of slide catch (17), and pull catch forward and up. Remove magazine.

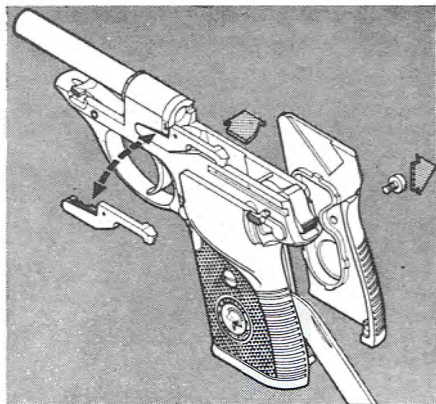


**2** Grasp slide firmly, pull fully rearward and lift rear end out of frame (19). Ease slide forward off barrel (21), and remove recoil spring (14). This is sufficient takedown for normal cleaning. Position tightest coil of recoil spring to rear during reassembly. Slide catch closes automatically as the slide moves over it.

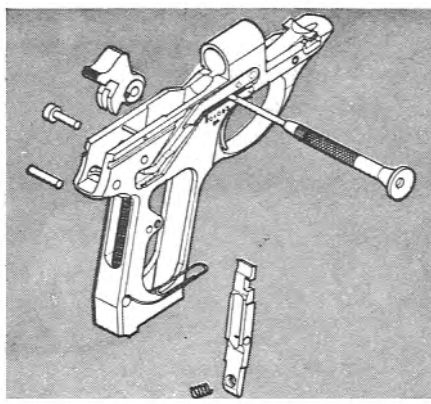


**3** For further disassembly, drive out firing pin retainer (6) to free firing pin (8) and spring (7). Depress extractor plunger (2) well into slide with ice pick or awl, pivot extractor (1) toward breech face and remove. Ease out plunger and spring (3).

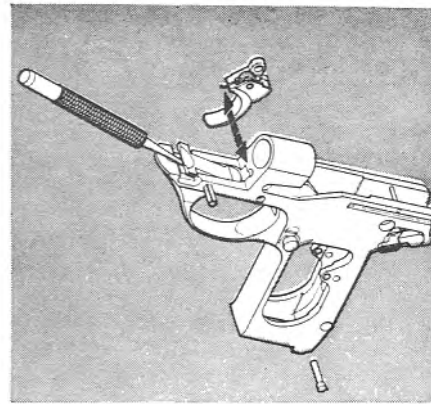




**4** Place left thumb against forward portion of ejector (27) so that its spring (26) cannot fly loose. Push rear of ejector to the right, levering forward end out of frame. On replacement, small hooked end of spring must seat into frame notch just forward of barrel flange (arrow). Remove barrel nut (20) with 15 mm. wrench to release barrel. Nylon inserts in barrel nut face toward frame in assembly. Remove right grip screw (10) and insert knife blade between the grips. Pry right grip (9) outward off positioning pin fixed to bottom of left grip (39). Engage safety, and remove left grip.



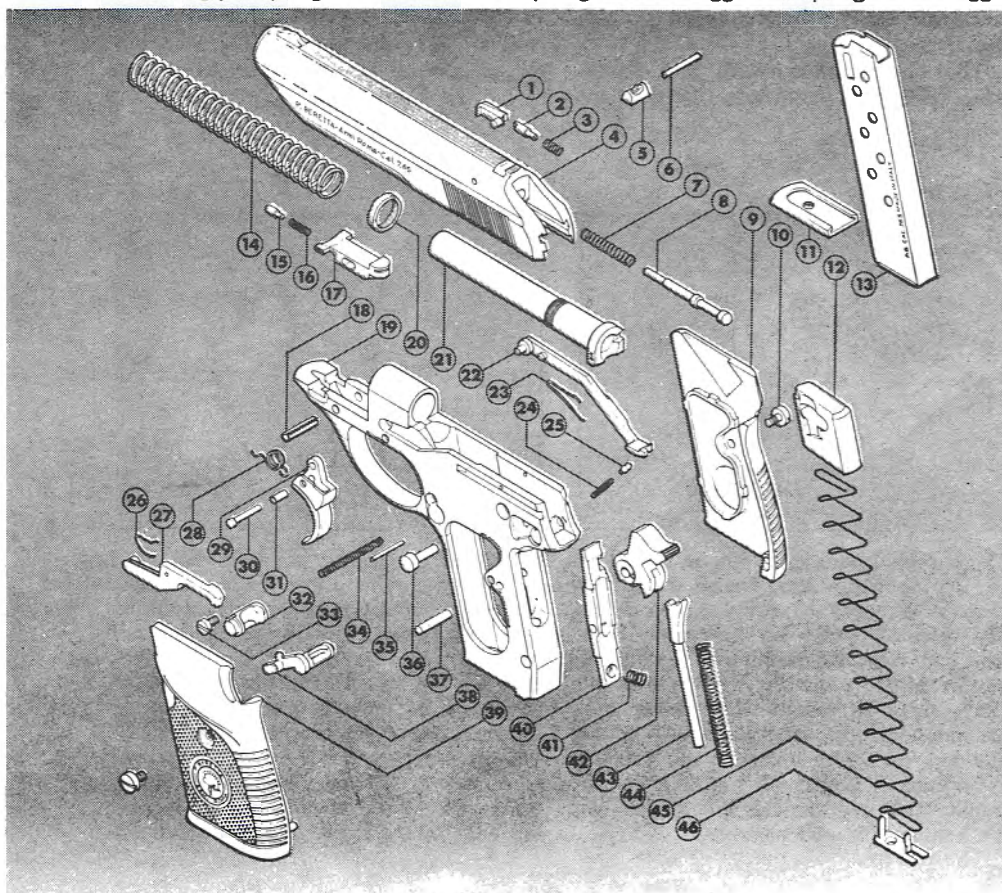
**5** Insert a straightened paper clip through small hole in tip of hammer strut (43), working through the frame tunnel provided. Release safety, pull trigger (29), and lower hammer (42) with thumb. Push out hammer pin (36) and lift out hammer. Push out sear pin (37) to release sear (40) and spring (41). Hold trigger depressed and insert small screwdriver between trigger bar (22) and spring (23). Lever the spring downward free of trigger bar. Then, pry the bar outward and off.



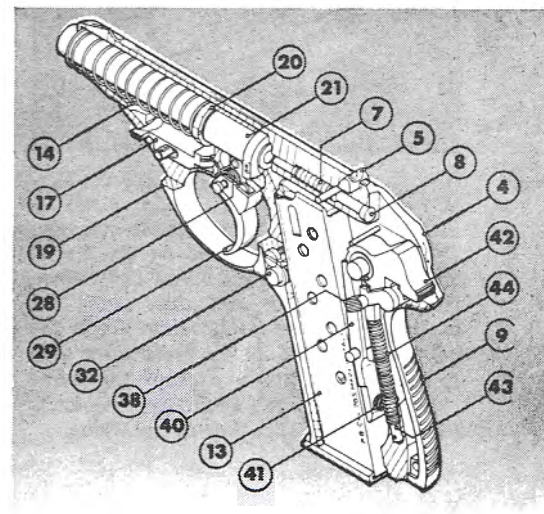
**6** Push out trigger pin (30). Pivot trigger assembly forward, and remove from below. On replacement, small hooked end of trigger spring (28) must seat into frame tunnel (arrow). Drift out slide catch pin (18) to remove slide catch, spring (16), and plunger (15). To reassemble slide catch parts, start pin through frame and partially into catch. Position catch in take-down attitude, and install spring and plunger through hole in its forward end. Depress plunger with a thin punch inserted through the frame channel provided, and tap pin to fully seat it.

#### Parts Legend

- |                        |                         |                        |                                      |                           |
|------------------------|-------------------------|------------------------|--------------------------------------|---------------------------|
| 1. Extractor           | 8. Firing pin           | 16. Slide catch spring | 24. Safety spring                    | 31. Trigger sleeve        |
| 2. Extractor plunger   | 9. Right grip           | 17. Slide catch        | 25. Safety plunger                   | 32. Magazine catch        |
| 3. Extractor spring    | 10. Grip screw (2)      | 18. Slide catch pin    | 26. Ejector spring                   | 33. Magazine catch screw  |
| 4. Slide               | 11. Magazine bottom     | 19. Frame              | 27. Ejector-empty magazine indicator | 34. Magazine catch spring |
| 5. Rear sight          | 12. Magazine follower   | 20. Barrel nut         | 28. Trigger spring                   | 35. Hammer stop pin       |
| 6. Firing pin retainer | 13. Magazine body       | 21. Barrel             | 29. Trigger                          | 36. Hammer pin            |
| 7. Firing pin spring   | 14. Recoil spring       | 22. Trigger bar        | 30. Trigger pin                      | 37. Sear pin              |
|                        | 15. Slide catch plunger | 23. Trigger bar spring |                                      | 38. Safety                |
|                        |                         |                        |                                      | 39. Left grip             |
|                        |                         |                        |                                      | 40. Sear                  |
|                        |                         |                        |                                      | 41. Sear spring           |
|                        |                         |                        |                                      | 42. Hammer                |
|                        |                         |                        |                                      | 43. Hammer strut          |
|                        |                         |                        |                                      | 44. Hammer spring         |
|                        |                         |                        |                                      | 45. Magazine spring       |
|                        |                         |                        |                                      | 46. Magazine bottom plate |



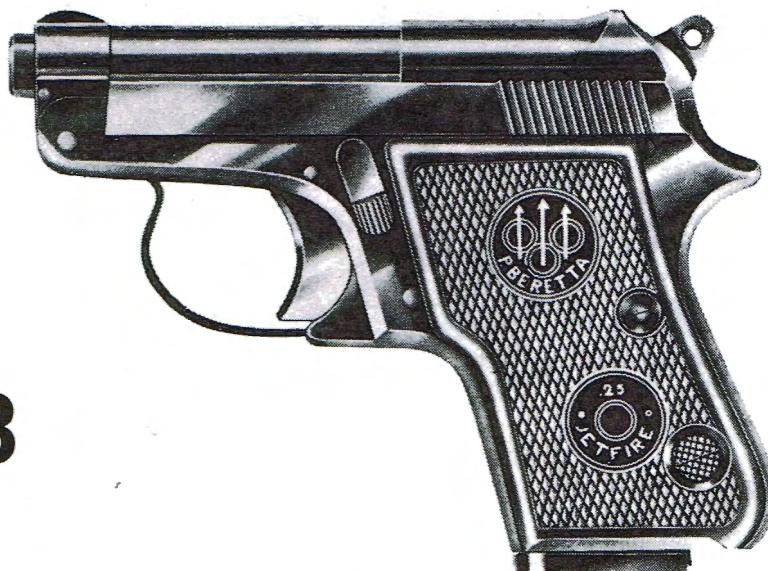
**7** Cutaway shows relationship between parts. Pistol is cocked. Chamber is loaded, and safety disengaged. Parts are number keyed to parts legend.





# Beretta 950B Jetfire Pistol

By E. J. HOFFSCHMIDT



**M**ADE by the Italian arms firm of Pietro Beretta, the Model 950B Jetfire cal. .25 ACP semi-automatic vest pocket pistol is a slightly modified version of the Beretta Model 950 pistol introduced after World War II. A similar Beretta pistol, designated Minx, is chambered for the .22 short rimfire cartridge. Except for mechanical changes necessitated by differences in caliber, disassembly and assembly procedures for the Jetfire and Minx pistols are identical.

The barrel of the Model 950B pistol is hinged at the muzzle end so that it can be tipped up for loading or cleaning by pushing a thumb latch on the

left side of the frame. This convenient feature makes it unnecessary to retract the slide manually to load or unload the gun. Unloading must be done by tipping up the barrel since there is no extractor in this pistol.

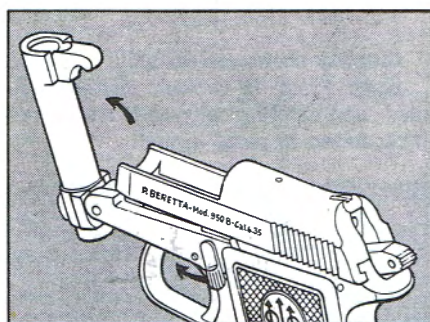
In use, the fired case acts as a piston and blows back the slide until the ejector kicks the case away from the slide and clear of the pistol. The returning slide then pushes a fresh round from the magazine into the chamber. Cocking of the exposed hammer is done automatically by the action of the recoiling slide.

The combination recoil and barrel latch spring of the Model 950B pistol

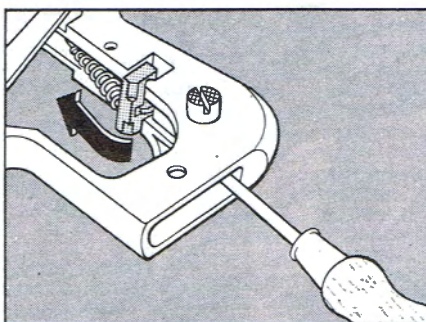
is formed from music wire and is secured in the frame by a cross pin in rear of the trigger. Upper ends of this spring extend beyond the frame and engage recesses in the slide. Adoption of this system eliminated the need for a coiled recoil spring around or under the barrel.

Two music wire recoil springs, one on each side of the frame, were employed in the earlier Model 950 pistol. A separate barrel latch spring was also used in this model.

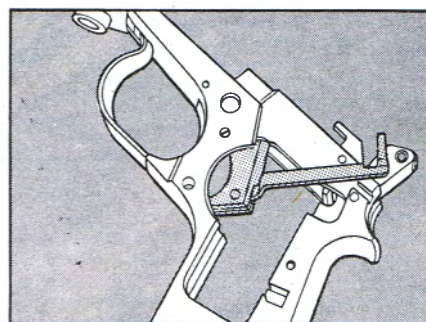
The Model 950 and Model 950B pistols lack mechanical safeties, but their exposed hammers can be placed in half-cock position.



**1** The takedown procedure for the Beretta Model 950B Jetfire pistol is simple and easy. First remove the magazine (27), then press forward on the barrel latch (18) to tip up the barrel (14). Now, clear the chamber and then swing the barrel up to vertical position. Cock the hammer (30) and lift the front of the slide (1) slightly, until it is free of the frame (22). Pull the slide forward approximately 1/8" and lift the slide free of the frame.

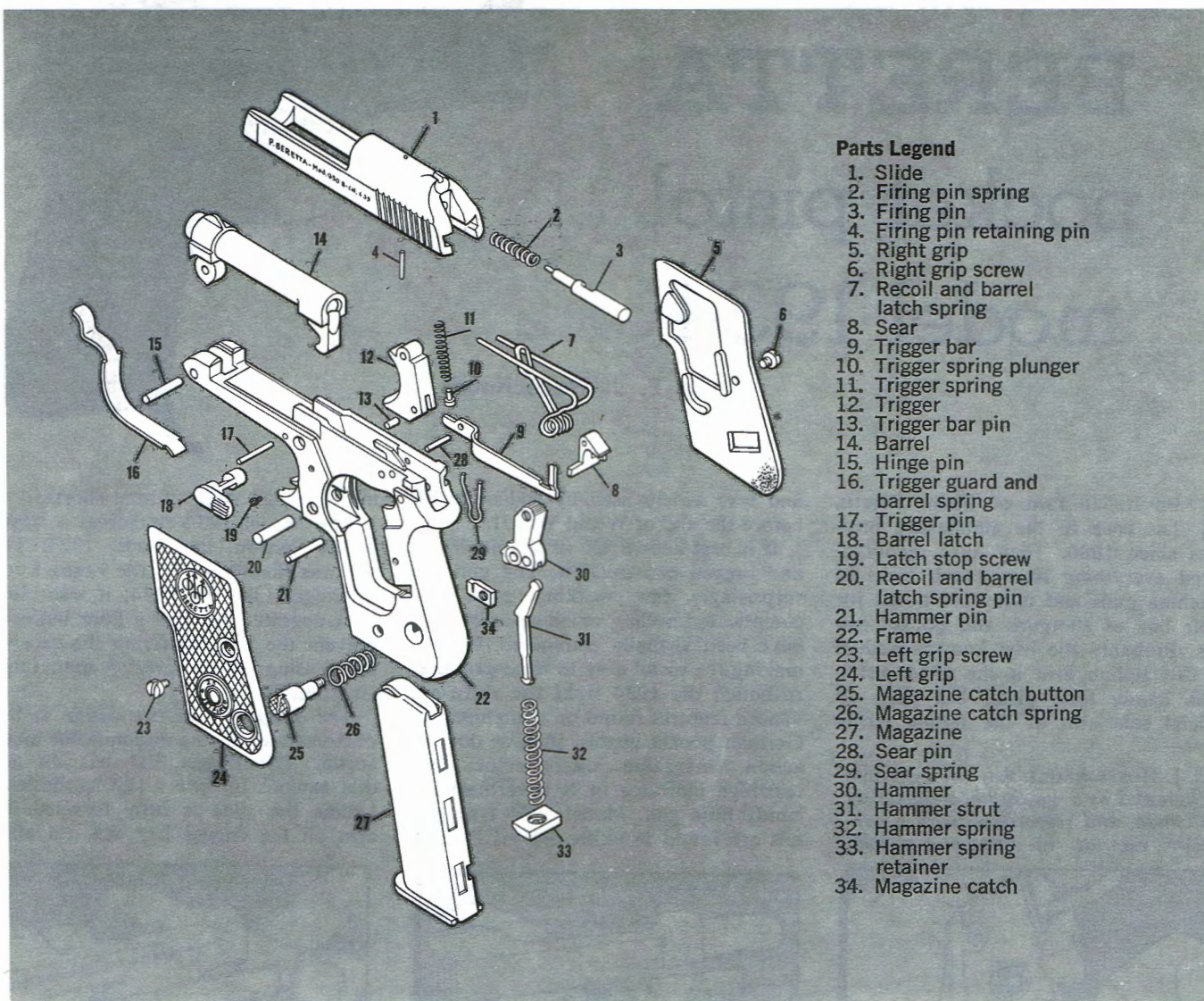


**2** Before driving steel pins in or out of an aluminum alloy frame, it is sound practice to relieve the spring tension on the part retained by the pin. Lower the hammer and remove the hammer spring assembly before removing the hammer pin (21). Insert a narrow screwdriver into the magazine well as shown. Push up and outward on the hammer spring retainer (33) until it is free of its recess in the frame. This will relieve the tension on the hammer pin and hammer.



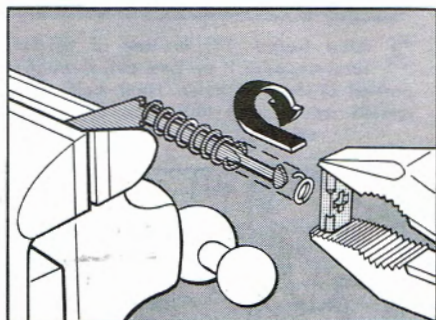
**3** After the trigger pin (17) has been removed, the trigger will snap back under the influence of the trigger spring (11). To remove the trigger, lift the tail of the trigger bar (9) up over the sear and pull the trigger assembly out through the cutout in the left side of the frame. Reverse the procedure for reassembly. When the trigger bar is back in its proper place below the sear, rotate the upper portion of the trigger until it lines up with the hole in the frame. Insert trigger pin.



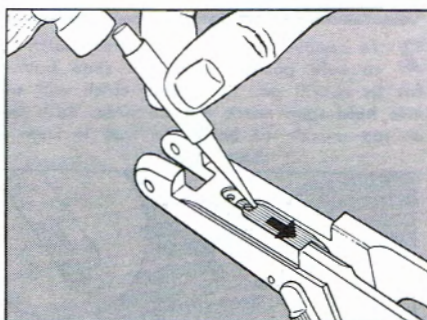


# Parts Legend

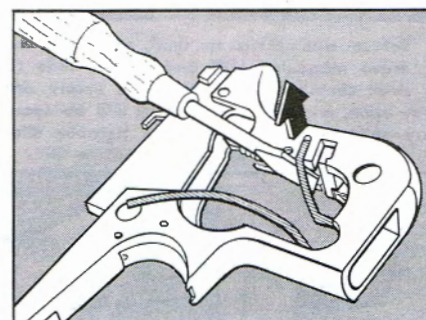
1. Slide
2. Firing pin spring
3. Firing pin
4. Firing pin retaining pin
5. Right grip
6. Right grip screw
7. Recoil and barrel latch spring
8. Sear
9. Trigger bar
10. Trigger spring plunger
11. Trigger spring
12. Trigger
13. Trigger bar pin
14. Barrel
15. Hinge pin
16. Trigger guard and barrel spring
17. Trigger pin
18. Barrel latch
19. Latch stop screw
20. Recoil and barrel latch spring pin
21. Hammer pin
22. Frame
23. Left grip screw
24. Left grip
25. Magazine catch button
26. Magazine catch spring
27. Magazine
28. Sear pin
29. Sear spring
30. Hammer
31. Hammer strut
32. Hammer spring
33. Hammer spring retainer
34. Magazine catch



**4** The hammer spring (32) and hammer strut (31) are assembled as a unit for easy handling. To disassemble this unit, hold the hammer strut in a padded vise as shown. Grasp the hammer spring retainer (33) with pliers and push toward the spring until the tail of the strut is clear of its seat in the retainer. Rotate the retainer 90° and ease the retainer off the tail of the strut. Be sure to use care in removing the retainer because it is under spring tension.



**5** In taking down the Beretta Model 950 Jetfire pistol, after the barrel hinge pin (15) and barrel (14) have been removed, the trigger guard can be pulled free of the frame. The barrel latch (18) must be removed in order to further disassemble the gun. To remove the barrel latch, first remove the tiny latch spring screw, and then gently drive the spring rearward out of its recess in the frame. The barrel latch can now be pulled from the frame of the pistol.



**6** In further disassembly of the Model 950, remove both grips to expose the separate recoil springs which must be removed one at a time. Lift the long leg of the recoil spring out of its recess in the frame. Next pry the short leg gently out of its recess as shown. Gently wiggle the spring out of its seat in the curved recess in the frame. The long legs of the springs are ground thinner on one side. This ground side must face toward the frame in reassembly. ■

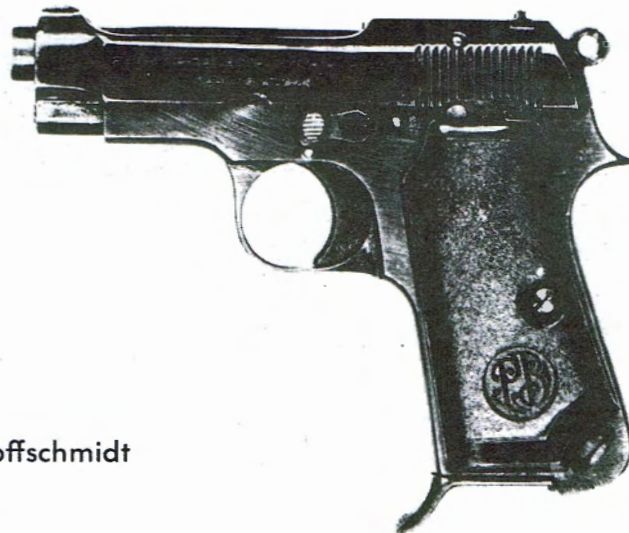


# BERETTA

## pocket pistol

### model 1934

By E. J. Hoffschmidt



**T**HE Italian firm of Pietro Beretta has been in the gunmaking business since 1680. They have manufactured everything from match locks to machine guns and today are noted for their line of shotguns and pocket pistols. Probably the best known product of this Italian firm is the 1934 pistol. This handy little pistol has been an official side arm of the Italian Army

*E. J. HOFFSCHMIDT has an extensive background as a gunsmith, engineering draftsman, and researcher, with a particular interest in automatic pistols.*

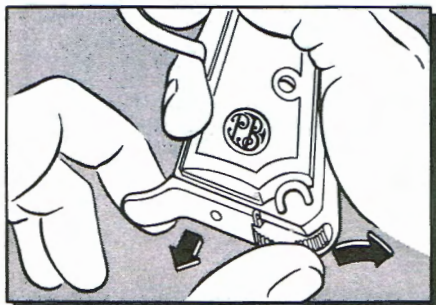
and was widely used by Italian police before the end of World War II.

It is best known for its simple design and rugged construction. The gun has surprisingly few working parts and complicated milling machine operations have been virtually eliminated, thereby making the pistol easy to mass-produce. Although the 1934 lacks the more advanced features found on contemporary German pocket pistols, such as double-action, magazine disconnect, and cartridge indicator, it is nevertheless a handy little gun. Model 1934 type pistols are found in either .32 ACP (7.65

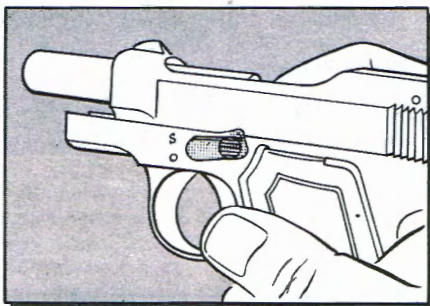
mm.) or .380 ACP (9 mm. short).

The Model 1934 resembles a larger, earlier version, the Model 1923. This gun was chambered for the 9 mm. Luger cartridge. Like the 1934, it was blow-back-operated but had a fiber buffer to prevent the slide battering the receiver when using the powerful 9 mm. Luger ammunition.

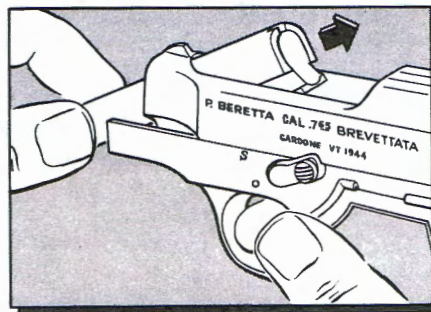
The simplicity of the design is best demonstrated by the disconnect mechanism. The trigger bar has an arm that extends up into a slot in the slide. Unless the slide is fully forward, the arm on the trigger bar will not allow



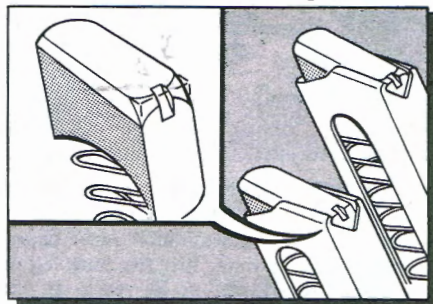
**1** Before attempting to field strip gun, remove magazine (18) and retract slide (1) to clear chamber. If magazine is empty and slide open, a good deal of force will be necessary to remove the magazine because slide pressure tends to hold magazine in



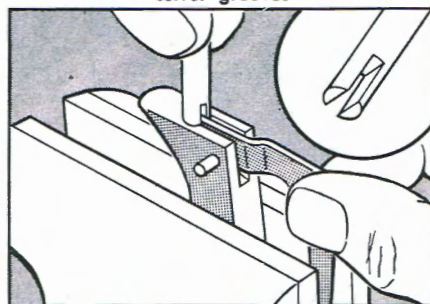
**2** To remove barrel, rotate safety catch (30) to safe position and pull slide back as far as it will go. The safety catch will snap into hold-open notch on the slide. Push back or tap muzzle of barrel to free it from receiver grooves



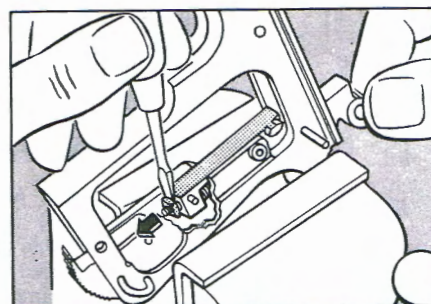
**3** After barrel (36) is free of recesses in receiver, push it up and out, through open portion of slide as shown. Next, hold slide and release safety catch (30). Ease slide assembly off front of receiver (33)



**4** To prevent magazine being held in by slide, grind back edge of follower to a slight radius, removing sharp shoulder that holds slide open after last shot. Remove follower before grinding by depressing button on magazine floorplate. At same time, slide plate off to front



**5** In general, the gun is simple to strip—it is merely a case of driving out retaining pins. When it comes to replacing trigger bar (24), the simple tool shown above will hold trigger spring plunger (25) depressed while trigger bar is pinned back into place



**6** After replacing sear lever (12), hammer (10) can be easily lined up with hole in receiver (33) if hammer strut is out of way. To do this, first push hammer strut down from hammer opening. Use a screwdriver or piece of brass to hold it down, as shown, until hammer is pinned into place



the trigger bar to engage the sear plate. This clever device prevents the gun firing full automatic, since it pushes the trigger bar clear of the sear plate every time the slide recoils and allows the sear to be released again only when the slide is fully forward.

Although the gun is reliable, it has one or two serious drawbacks. When the last shot is fired, the slide is held open by the empty magazine follower. The slide cannot be run forward until the empty magazine is removed. Since the magazine must be withdrawn against the pressure of a stiff recoil spring, the operation requires two

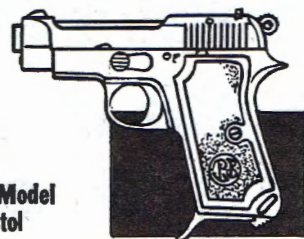
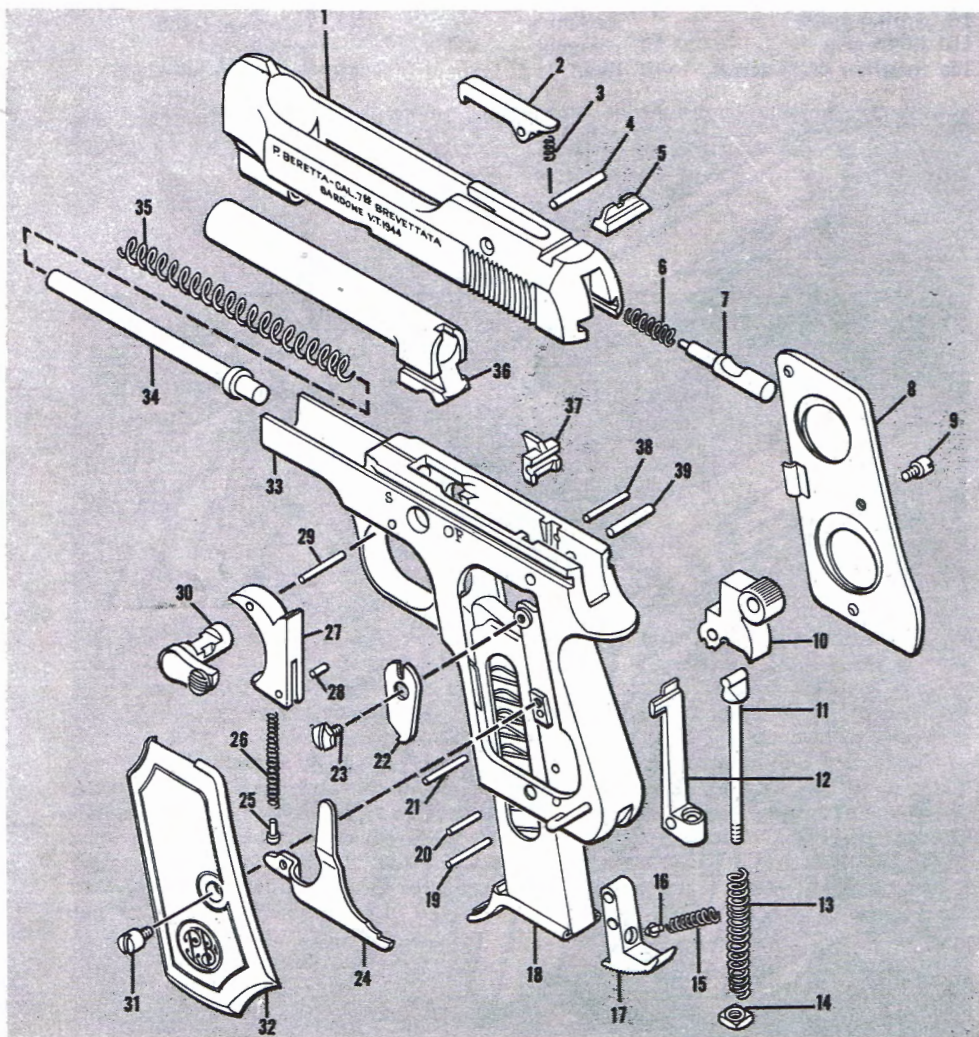
hands and a good deal of force, or else the slide must be locked back in take-down position by the safety catch, a slow operation either way.

This feature was corrected on some pistols by grinding the back edge of the magazine follower as shown in illustration 4. If this is done, the gun will not remain open after the last shot and the magazine can be removed easily.

Another awkward feature is the position and amount of motion necessary to operate the safety catch. Since the safety catch locks only the trigger, it is theoretically possible for the gun to fire if dropped on the hammer. —■

#### Parts Legend

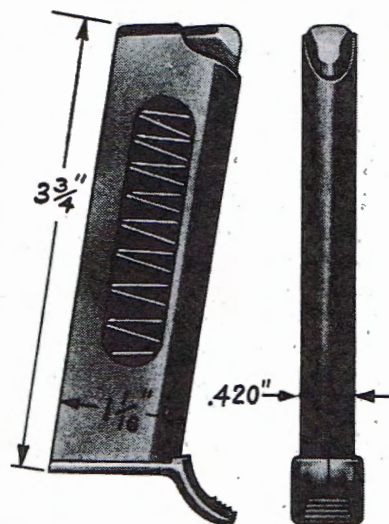
- |                              |                            |
|------------------------------|----------------------------|
| 1. Slide                     | 21. Sear lever pin         |
| 2. Extractor                 | 22. Sear plate             |
| 3. Extractor spring          | 23. Sear plate screw       |
| 4. Extractor pin             | 24. Trigger bar            |
| 5. Rear sight                | 25. Trigger spring plunger |
| 6. Firing pin spring         | 26. Trigger spring         |
| 7. Firing pin                | 27. Trigger                |
| 8. Right-hand grip           | 28. Trigger bar pin        |
| 9. Grip screw (see 31)       | 29. Trigger pin            |
| 10. Hammer                   | 30. Safety catch           |
| 11. Hammer strut             | 31. Grip screw (see 9)     |
| 12. Sear lever               | 32. Left-hand grip         |
| 13. Hammer spring            | 33. Receiver               |
| 14. Hammer strut nut         | 34. Recoil spring guide    |
| 15. Magazine catch spring    | 35. Recoil spring          |
| 16. Spring follower          | 36. Barrel                 |
| 17. Magazine catch           | 37. Ejector                |
| 18. Magazine                 | 38. Ejector pin            |
| 19. Magazine catch pin       | 39. Hammer pin             |
| 20. Magazine catch hinge pin |                            |



Beretta Model  
1934 Pistol

## PISTOL MAGAZINES

One of a series



Many Model 1934 Beretta pocket pistols were brought back by soldiers after World War II. These simple, rugged pistols are found in cal. .380 and .32 ACP. They are generally well made and finished, though later wartime production guns show a marked deterioration in finish and workmanship. Beretta magazines can be identified by the wide, open panel on each side.



The finger-rest floorplate affords a good grip and facilitates removal of the magazine. The cal. .32 magazine usually has a stamped floorplate, while the cal. .380 floorplate is usually machined from steel.



Beretta magazine followers are machined from steel. They must be rugged, since they act as a slide hold-open device when the last shot has been fired. The V-groove cutout on the back strap and the small notch in the follower are good points of recognition.—EDWARD J. HOFFSCHMIDT



# BERGMANN

## Special Model

### Pocket Pistol

By E. J. HOFFSCHMIDT

**T**HEODOR Bergmann was one of the earliest exponents of self-loading weapons. His firm, in Gaggenau and Suhl, Germany, turned out a wide variety of guns, ranging from automatic pistols to light machine guns.

Shortly before World War II, German gun firms were engaged in a double-action pistol race. Walther started the activity with their extremely successful models PP and PPK. To compete, Mauser and J. P. Sauer brought out double-action pistols. Around this time the firm of August Menz started production on a double-action pistol also produced under the Theodor Bergmann trade name.

While resembling the Walther PP, the Menz or Bergmann is different internally. The gun is a maze of small springs and intricately machined parts and has an unusual double-action trigger. On an ordinary double-action pistol, a steady pull on the trigger will cock the hammer and fire the gun. On the Bergmann a steady pull will only bring the hammer back to full cock and hold it there. The trigger must then be released slightly and pulled again to fire the gun. This makes aimed fire much easier but prevents getting the psychological first shot off rapidly.

#### Safety is unusual

The safety is unusual as it rotates the firing pin out of line with the hammer but does not lock the sear. The firing pin, housed in a cylinder, is rotated by the safety catch. As the firing pin housing rotates, a projection on the end moves into position to absorb the hammer blow. This construction gives an unusual degree of effectiveness to the Bergmann Special safety.

The slide remains open after the last round is fired. When the empty magazine is removed, a short pull on the slide releases the catch and allows the slide to close.

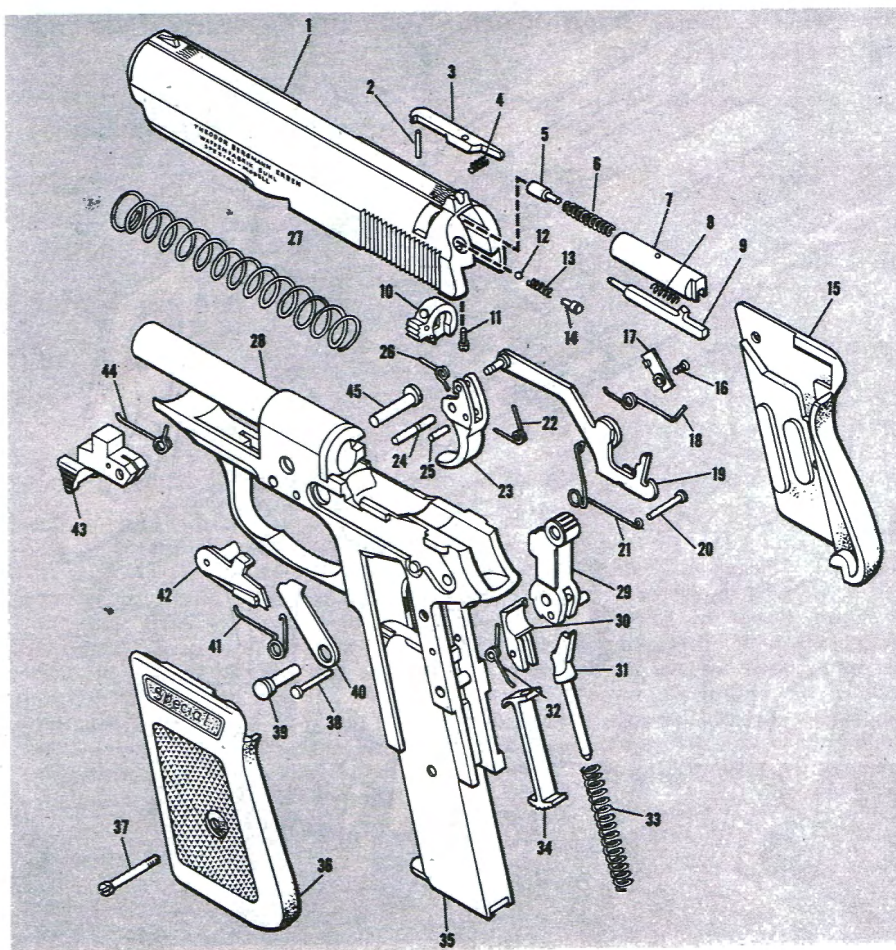
Sales of the cal. .32 Model I began around 1938. The cal. .380 Model II was to be produced a short time later but the beginning of World War II in 1939 put an end to this interesting line of pocket pistols.



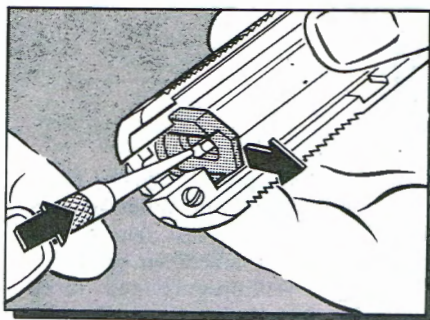
**1** To field strip the Bergmann, first remove magazine and clear chamber. Pull down takedown latch (43) at front of trigger guard. Pull slide to rear as far as it will go and lift it free of frame. Slide (1) can now be run forward off barrel

#### Parts Legend

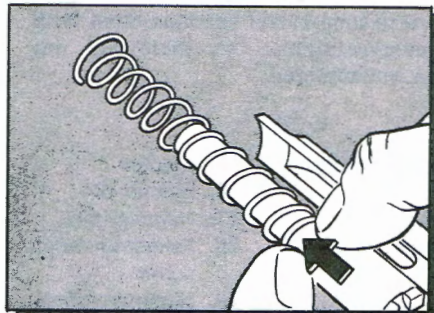
- |                           |                               |                           |
|---------------------------|-------------------------------|---------------------------|
| 1. Slide                  | 17. Spring retainer plate     | 31. Hammer strut          |
| 2. Extractor pin          | 18. Trigger bar guide spring  | 32. Sear spring           |
| 3. Extractor              | 19. Trigger bar               | 33. Hammer spring         |
| 4. Extractor spring       | 20. Spring retainer pin       | 34. Magazine catch        |
| 5. Housing plunger        | 21. Trigger bar spring        | 35. Magazine              |
| 6. Plunger spring         | 22. Pin retainer spring       | 36. Left grip             |
| 7. Firing pin housing     | 23. Trigger                   | 37. Grip screw            |
| 8. Firing pin spring      | 24. Trigger pin               | 38. Sear stop pin         |
| 9. Firing pin             | 25. Retainer spring pin       | 39. Hammer pin            |
| 10. Safety catch          | 26. Trigger spring            | 40. Ejector               |
| 11. Detent retainer screw | 27. Recoil spring             | 41. Hold-open spring      |
| 12. Detent ball           | 28. Frame and barrel assembly | 42. Hold-open catch       |
| 13. Detent spring         | 29. Hammer                    | 43. Takedown latch        |
| 14. Spring guide          | 30. Sear                      | 44. Takedown latch spring |
| 15. Right grip            |                               | 45. Takedown latch pin    |
| 16. Retainer plate screw  |                               |                           |



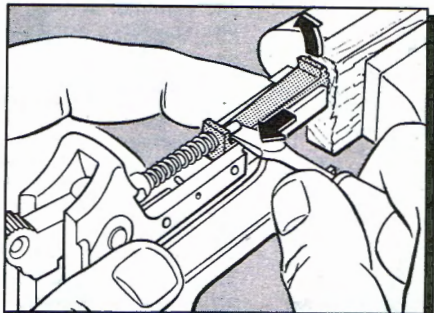




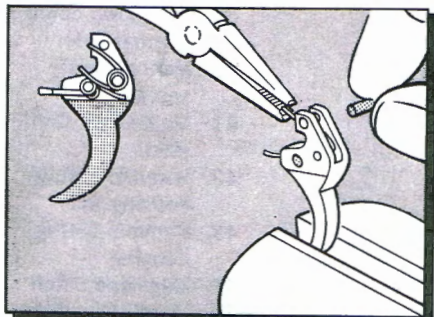
2 Safety catch (10) must be removed to get at firing pin (9). Loosen detent retainer screw (11) and carefully remove detent components. Hold firing pin housing (7) and firing pin forward and free of seat in safety catch, and push up safety catch



3 Last coil of recoil spring (27) fits barrel very snugly and must be pushed free as shown. When replacing spring, be sure large end protrudes off barrel; otherwise gun cannot be reassembled



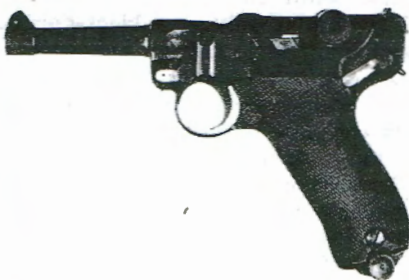
4 Magazine catch (34) hooks over a cross pin in frame and must be pushed back and lifted up for removal. Use a screwdriver to ease it free and to prevent hammer spring (33) from throwing catch. Remove hammer spring and strut (31)



5 Trigger (23) houses 2 springs—trigger spring (26) and pin retainer spring (22). When reassembling gun, use slave pins to hold springs in place. Slave pins should be only as wide as trigger and are pushed out when parts are pushed in ■

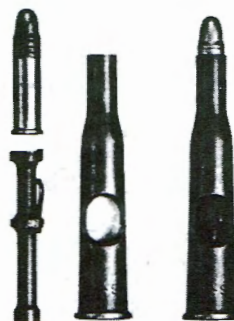
## Illustrated Definitions

Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not, and are not intended to be, technically or legally complete



**Parabellum pistol (Luger)**—Semi-automatic pistol in cal. 7.65 mm. and 9 mm. made principally by D.W.M. (German Arms and Ammunition Co.) and the Mauser Works. It was the standard German military pistol for many years, and is popularly known in this country as the Luger, after its designer. It is also known by various model designations, most popular being the German Service Model '08. "Parabellum" was the code name of the D.W.M. firm. There was also a Parabellum aircraft machine gun used by Germany in World War I.

**Auxiliary chamber**—Also called a supplemental chamber, this is a device which adapts a firearm to fire a cheaper and less powerful cartridge than that for which it is intended. It is made to fit the gun chamber, and holds the cartridge in its rear or front end. The type shown has a striker which transmits the blow of the gun's firing pin to the cartridge.



**Long-range sights**—Front and rear auxiliary sights on military rifles for long-range fire. They were used on the British Pattern 14 Enfield rifle, several models of the British Lee-Enfield, early specimens of the Danish Model 1889 Krag-Jorgensen rifle, and the Austro-Hungarian Model 1888 Mannlicher. Their use was discontinued during World War I when it was found that machine-gun barrages were more effective at long ranges than massed rifle fire. Typical long-range sights shown, on a British Pattern 14 rifle, consists of aperture on left rear of receiver, and front sight on arm pivoted to range plate on left side of fore-end.



**Paine sights**—Bead front and U-notch rear handgun sights developed for target shooting by Ira Anson Paine, famous U. S. pistol shot during the late 1800's. They were formerly quite popular, but most pistol shots now favor Patridge square blade front and rectangular-notch rear sights.



# BERNARDELLI MODEL 60 PISTOL

Illustrations By DENNIS RIORDAN  
Text By LUDWIG OLSON

**P**RODUCED by the well-known firm of Vincenzo Bernardelli in Gardone V.T., Italy, the Bernardelli Model 60 semi-automatic pistol is designed for informal target shooting and self defense. This modern blowback-operated arm was introduced in 1959. It is made in .22 long rifle and .32 ACP calibers

and was also formerly offered in cal. .380 ACP.

The Model 60 is handsome and of simple construction. It has a 3½" barrel attached rigidly to a black-finished lightweight alloy frame. The slide is blued steel, and houses the barrel and recoil spring. Both sights are integral with the slide which is serrated along the top to reduce glare.

Located on the left side of the frame behind the trigger, the manual safety is convenient to operate with the thumb. Other safeties are a half-cock position of the exposed hammer, and a maga-

zine safety which prevents firing when the magazine is removed. What appears to be a safety on the left rear of the frame is actually a takedown catch.

The large, well-proportioned black plastic grips are checkered on the sides and rear. A curved piece integral with the black plastic magazine base serves as a rest for the little finger and contributes to ease of handling.

Well made and reliable, the Model 60 is an excellent pistol. It is also produced in long-barrel versions fitted with target-style sights, but these are not often encountered.

## Parts Legend

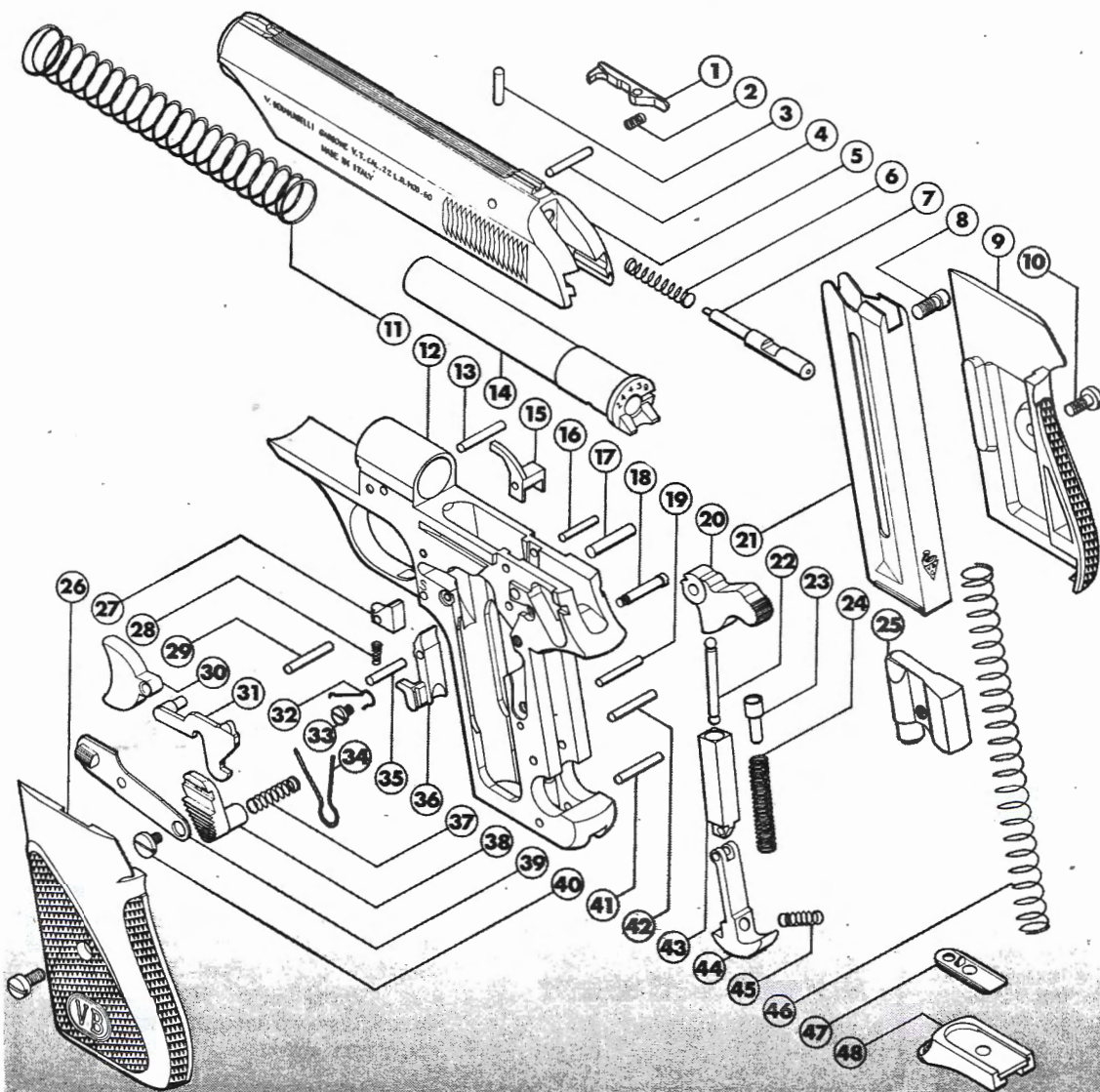
1. Extractor
2. Extractor spring
3. Extractor pin

4. Firing-pin retainer
5. Slide
6. Firing-pin spring
7. Firing pin

8. Magazine-follower button
9. Right grip
10. Grip screw (2)

11. Recoil spring
12. Frame
13. Barrel pin
14. Barrel

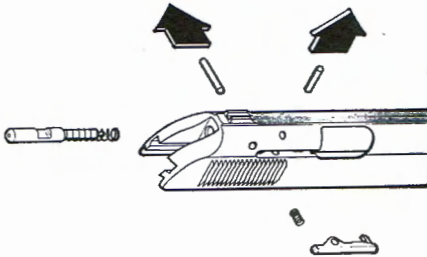
15. Ejector
16. Ejector pin
17. Hammer pin
18. Takedown-catch screw
19. Hammer-spring housing stop
20. Hammer
21. Magazine body
22. Hammer strut
23. Hammer plunger
24. Hammer spring
25. Magazine follower
26. Left grip
27. Magazine safety
28. Magazine-safety spring
29. Magazine-safety pin
30. Trigger
31. Trigger bar
32. Trigger-bar spring
33. Trigger-bar spring screw
34. Sear spring
35. Sear pin
36. Sear
37. Takedown-catch spring
38. Takedown catch
39. Manual safety
40. Manual-safety screw
41. Magazine-catch stop
42. Hammer-spring housing pin
43. Hammer-spring housing
44. Magazine catch
45. Magazine-catch spring
46. Magazine spring
47. Magazine-spring plate
48. Magazine base



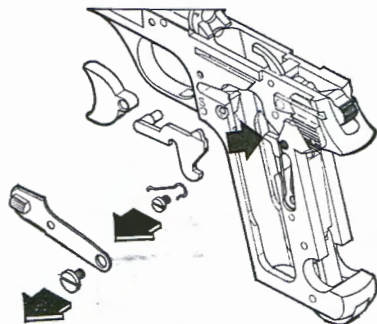




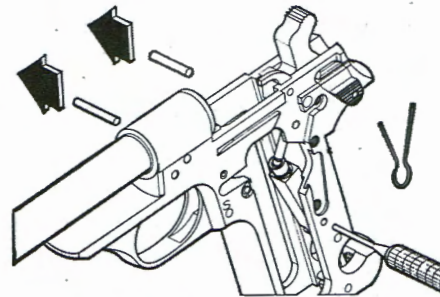
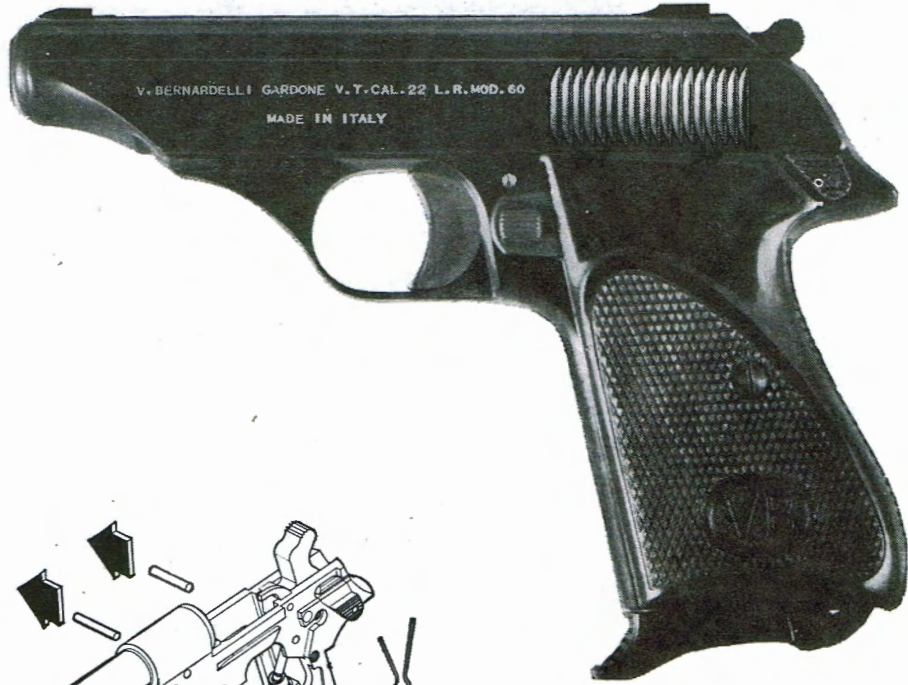
**1** Begin field-stripping the Model 60 by moving manual safety (39) up to safe position. Push back magazine catch (44) and remove magazine. Draw slide (5) fully rearward to clear chamber. Hold takedown catch (38) depressed and pull slide rearward  $\frac{5}{8}$ ". Then, lift rear of slide and ease forward off frame (12). Remove recoil spring (11). This is sufficient take-down for normal cleaning. Position tightest coil of recoil spring to rear in reassembly.



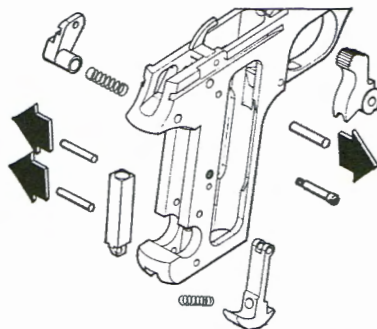
**2** For further disassembly, drift out firing-pin retainer (4) to release firing pin (7) and spring (6). Drift out extractor pin (3), and remove extractor (1) and its spring (2). Extractor pin must not protrude from bottom of slide on replacement.



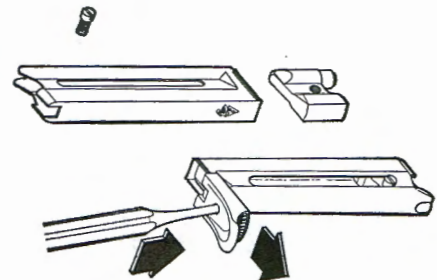
**3** Unscrew grip screws (10) and remove grips (9) (26). Remove manual-safety screw (40) and lift off manual safety. Unhook trigger-bar spring (32) from trigger bar (31). Unscrew trigger-bar spring screw (33) and remove trigger-bar spring. Pull trigger-bar from frame. Draw trigger (30) forward and remove through trigger guard. Grasp hammer (20) firmly and push arm of sear (36) to the rear. Ease hammer fully forward.



**4** Unhook arms of sear spring (34) from sear and frame, and pry the spring upward out of its frame grooves. Drift out sear pin (35) and remove sear. Drift out hammer-spring housing stop (19) with  $\frac{1}{16}$ " diameter pin punch. Hold hammer-spring housing (43) to rear while removing punch, then allow housing to pivot slowly forward into the magazine well until spring tension is relieved. Remove hammer strut (22), plunger (23), and spring (24).

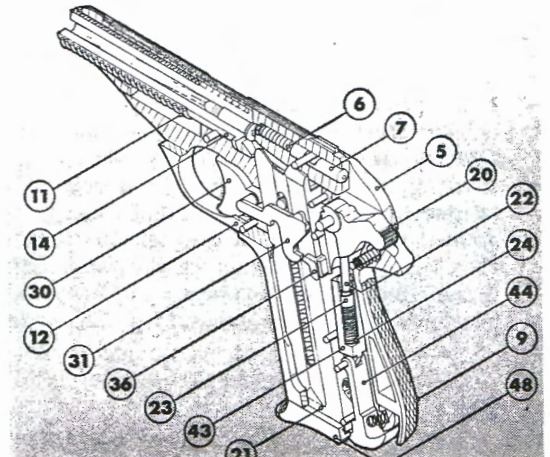


**5** Drift out hammer pin (17) and remove hammer. Drift out magazine-catch stop (41) and remove magazine-catch spring (45). Hammer-spring housing and magazine catch are released by removing hammer-spring housing pin (42). Unscrew takedown-catch screw (18) to release takedown catch and spring (37). Reassemble in reverse. Angled cut on spring housing faces toward rear of frame. Assembly of hammer group is eased if hammer spring is tensioned with hammer in full-cock position.



**6** To dismount magazine, depress spring plate (47) with punch inserted through hole in magazine base (48). Slide base partially forward. Then, place thumb over spring plate as base is removed. Ease spring plate and spring (46) from magazine body (21). Unscrew follower button (8) and slide follower (25) out through bottom of magazine body.

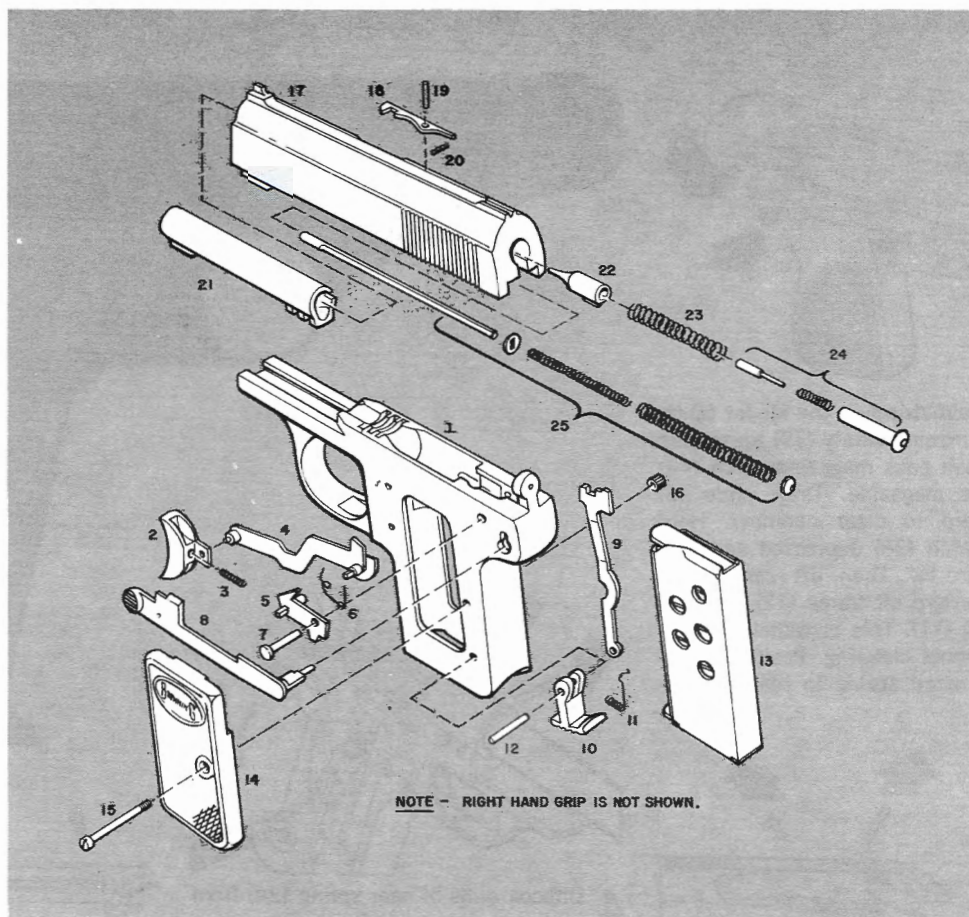
**7** Cutaway indicates relationship between parts. Pistol is shown loaded and cocked. Parts are number keyed to parts legend.





## Parts Legend

1. Receiver
2. Trigger
3. Trigger spring
4. Connector
5. Sear
6. Sear spring
7. Sear pin
8. Safety
9. Magazine safety
10. Magazine latch
11. Magazine latch spring
12. Magazine latch pin
13. Magazine assembly
14. Grip, left (right grip not shown)
15. Grip screw
16. Grip escutcheon (contained in right grip)
17. Slide
18. Extractor
19. Extractor pin
20. Extractor spring
21. Barrel
22. Firing pin
23. Firing pin spring
24. Cocking indicator assembly
25. Recoil spring assembly



# BROWNING Cal. .25 AUTO PISTOL



By JAMES M. TRIGGS

**T**HE original cal. .25 ACP (6.35 mm. Browning) pocket pistol, invented by John M. Browning in 1905, was patented that same year in Belgium. Initial production in 1905 was by the Belgian arms firm, Fabrique Nationale d'Armes de Guerre. The U. S. patent covering this hammerless, blowback operated, semi-automatic pistol was granted to Browning on Jan. 25, 1910 (No. 947,478). Production of this pistol in the United States was begun in 1908 by Colt's Patent Fire Arms Mfg. Co.,

under licensing arrangement with the inventor. Over a million of these 'vest pocket' pistols have been produced by the FN firm, and Colt's produced approximately 500,000 before discontinuing this model in 1946.

## Redesigned model

In 1954, the Browning Arms Co. of St. Louis, Mo., introduced a redesigned model of this pistol made in Belgium by the FN firm. It features a magazine disconnector, mechanical safety, and

cocking indicator, and weighs only 10 ozs. in the standard model. Magazine capacity is 6 shots. A lightweight version weighing 7¾ ozs. is available.

The Browning cal. .25 ACP pistol is offered in Standard and Renaissance grades, the latter featuring a hand engraved chrome-plated frame and slide, polyester pearl grips, and gold-plated trigger. The Standard grade pistol is blue-finished and grips are of black plastic. The lightweight model is chrome-plated and has pearl grips.

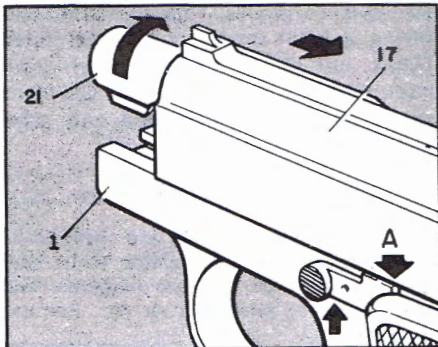


## Disassembly Procedure

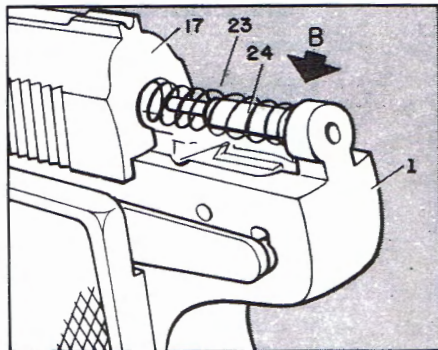
Pull back magazine latch (10) and remove magazine (13) from butt. Draw slide (17) back and check chamber to be sure pistol is unloaded. Replace empty magazine and pull trigger to uncock action. Remove magazine.

Draw slide to rear until forward nose of safety (8) can be pressed up into front notch of slide, holding slide to rear. Turn barrel (21)  $\frac{1}{3}$ -turn clockwise, push down on safety, and release slide from receiver to front.

Remove recoil spring assembly (25) from receiver. Turn barrel  $\frac{1}{3}$ -turn counterclockwise and withdraw it from front end of slide (17). Firing pin (22), firing pin spring (23), and cocking indicator assembly (24) may be removed from rear of slide. Extractor (18) and extractor spring (20) may be removed by drifting out extractor pin (19). Reassemble in reverse.



**1** To separate slide (17) from receiver (1), pull slide back until forward nose of safety (8) can be pressed up into front notch of slide (17) as shown at "A", holding slide to rear. Turn barrel (21)  $\frac{1}{3}$ -turn clockwise to unlock it from receiver. Push down on safety and draw slide forward off receiver

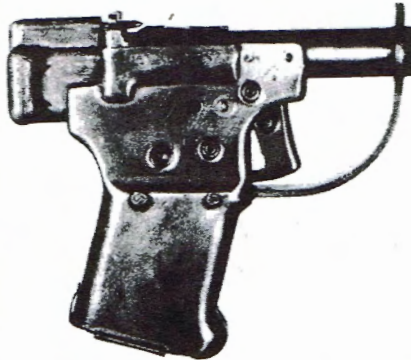
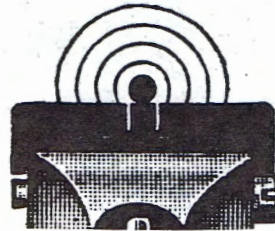


**2** In reassembling pistol, replace barrel so that its ribs enter corresponding grooves in slide. Replace recoil spring assembly (25) in receiver and firing pin (22), spring (23), and cocking indicator assembly (24) in rear of slide. Replace slide on receiver so its lugs engage grooves in receiver. Be sure that rear of cocking indicator assembly (24) is seated against spur projecting upward from rear of receiver as shown at "B". Push slide rearward until forward nose of safety can be pressed up into front notch of slide. Turn barrel  $\frac{1}{3}$ -turn counterclockwise, locking it in receiver. Disengage safety, release slide, and replace magazine, completing reassembly

## Illustrated Definitions

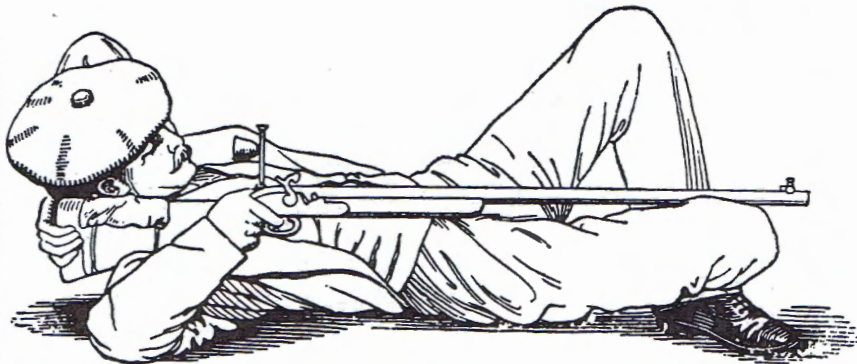
Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not, and are not intended to be, technically or legally complete

**Six-o'clock hold**—Sighting picture commonly used in target shooting. Top of front sight is aligned with bottom or 6-o'clock position of the black bullseye. For most shooters this affords more accurate sighting than attempting to align top of front sight with center of bullseye.



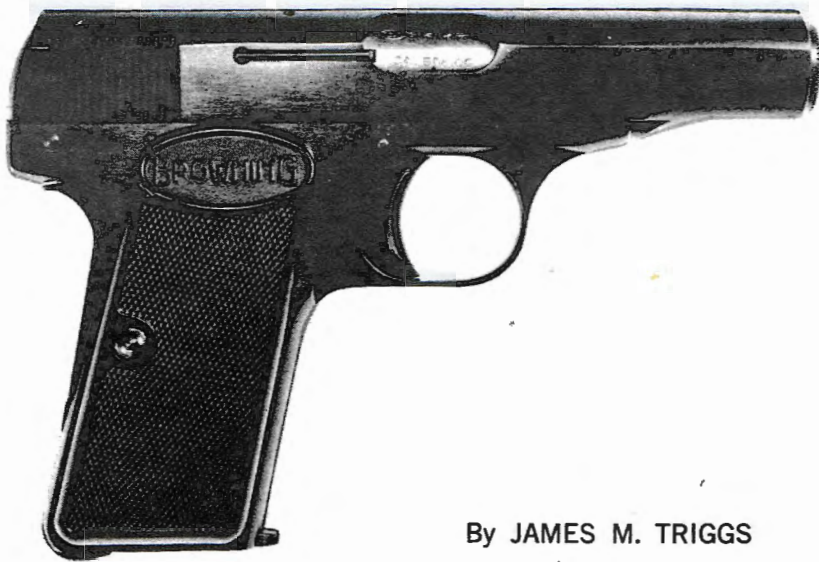
**Liberator pistol**—Single-shot pistol made in this country during World War II for use by the Office of Strategic Services (OSS) in arming underground resistance forces in enemy-occupied countries. It is chambered for the cal. .45 ACP cartridge, and was very cheaply made from sheet-metal stampings. One million were produced by Guide Lamp Div., General Motors Corp.

**En bloc clip**—Type of clip used with M1 Garand (and other) rifles. The clip and cartridges are inserted into magazine *en bloc* (together), and the magazine will not work without it. This type of clip was introduced in the 1880's with the Austro-Hungarian Mannlicher straight-pull rifles. It was first used in this country during the 1920's in the Pedersen semi-automatic rifle, and later in Garand semi-automatic rifles.



**Back position**—Shooting position in which shooter lies on his back and supports front part of rifle on his legs or feet. Rifle butt is supported in various ways, the most usual being against the upper arm near the armpit or held with left hand. It is a very steady position, and was used in England as early as the 18th century. It was especially popular in the international long-range matches of the 1870's, and was used by British, U. S., and Irish shooters. It is no longer used in this country, but is still popular in England for long-range matches. There are some variations of this position named after riflemen who developed them. The back position shown is also known as the Fulton position, after Henry Fulton, NRA Secretary in 1875.





By JAMES M. TRIGGS

# BROWNING .380 AUTO PISTOL

IN 1910 John M. Browning obtained a Belgian patent for an improved version of his earlier Model 1900 semi-automatic pocket pistol. The new pistol, designated Model 1910, featured both magazine and grip safety mechanisms and was striker-fired. The recoil spring encircled the barrel, which gave the muzzle end of the gun a rather streamlined appearance.

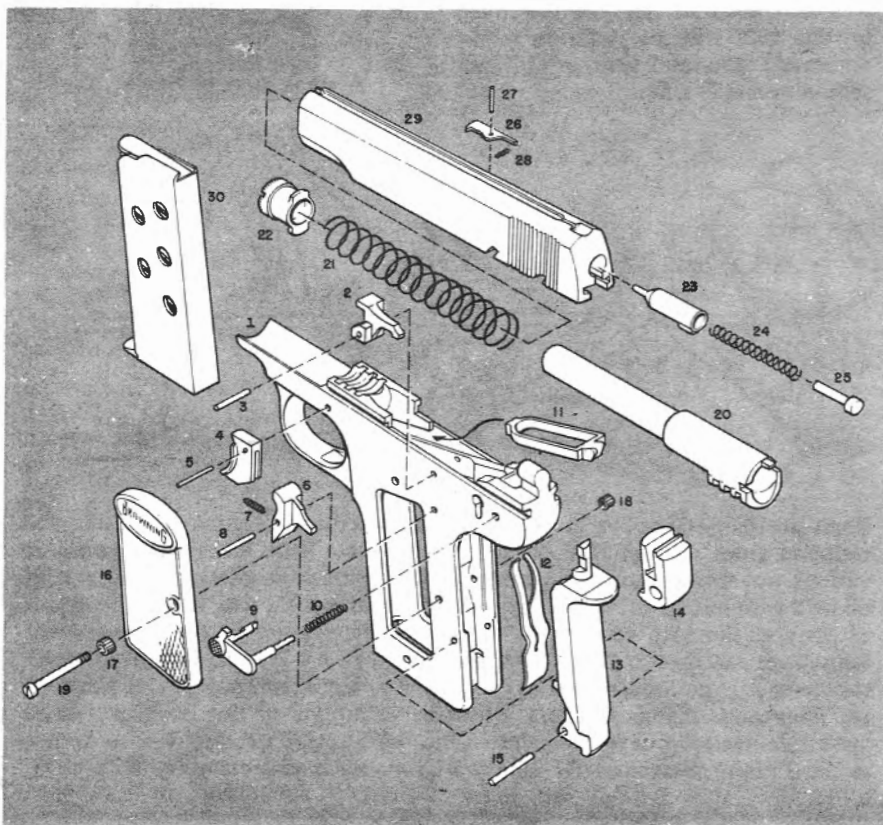
It was first produced in 1912 by the Belgian firm of Fabrique Nationale d'Armes de Guerre, but was not exported for sale in the United States until 1954 when it was introduced in cal. .380 ACP only. It is available in Canada in both cal. .32 ACP and .380 ACP.

The Browning cal. .380 pistol weighs 20 ozs. and has a magazine capacity of 6 rounds. It is offered in Standard and Renaissance grades, with the latter featuring a hand-engraved, chrome-plated frame and slide, polyester pearl grips, and gold-plated trigger. The Standard grade pistol is blue-finished and grips are of black plastic.

## Disassembly Procedure

Remove magazine (30) and check to be sure it is empty. Check action to be sure pistol is unloaded. Replace magazine and pull trigger to release firing pin. Remove magazine.

Pull slide (29) to rear until nose of safety (9) enters front notch of slide. Turn barrel (20) 1/3-turn counterclockwise and



## Parts Legend

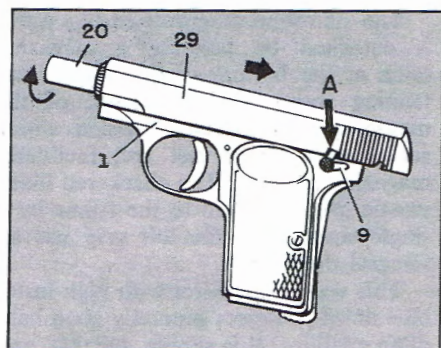
1. Receiver
2. Sear
3. Sear pin
4. Trigger
5. Trigger pin
6. Magazine safety
7. Magazine safety spring
8. Magazine safety pin
9. Safety
10. Safety spring
11. Connector
12. Sear spring
13. Grip safety
14. Magazine latch
15. Grip safety pin
16. Grips (right grip not shown)
17. Grip escutcheon, unthreaded
18. Grip escutcheon, threaded (contained in right grip)
19. Grip screw
20. Barrel
21. Recoil spring
22. Slide ring
23. Firing pin
24. Firing pin spring
25. Firing pin spring guide
26. Extractor
27. Extractor pin
28. Extractor spring
29. Slide
30. Magazine assembly



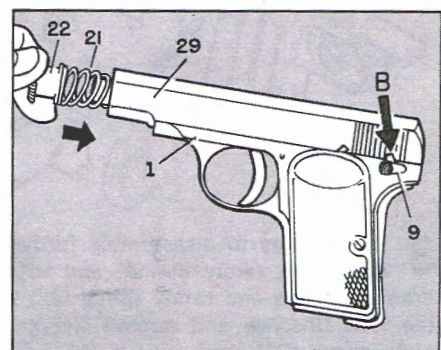
press safety down to release slide. Draw slide assembly off receiver to front. Remove firing pin (23), firing pin spring (24), and guide (25) from rear of slide.

With slide upside down, turn barrel  $\frac{1}{3}$ -turn clockwise until its lugs release from slide. Depress slide ring (22) slightly and rotate it  $\frac{1}{4}$ -turn counterclockwise until its lugs release from slide. Take care as slide ring is under great pressure from recoil spring (21). Withdraw slide ring, barrel, and recoil spring from slide.

To assemble, replace barrel in slide and turn it so its lugs enter corresponding groove in rear of slide. Replace firing pin assembly in rear of slide. Replace slide on receiver and push back until safety nose engages front notch in slide. Turn barrel clockwise, release safety, and allow slide to move forward until nose of safety can be engaged in rear notch in slide. Replace recoil spring around barrel and place slide ring on spring and press spring back into slide. Position slide ring so its lugs enter corresponding slots in face of slide. When slide ring is firmly seated, rotate  $\frac{1}{4}$ -turn clockwise to lock it in place.



**1** To remove slide (29) from receiver (1), pull slide back to position shown. Press nose of safety (9) up into front notch of slide as shown at "A". Turn barrel (20)  $\frac{1}{3}$ -turn counterclockwise. Depress safety (9); draw slide off receiver to front



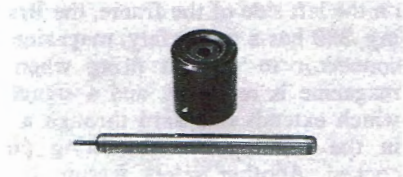
**2** In reassembling pistol, after replacing slide assembly on receiver, lock in rear position with nose of safety (9) in forward notch of slide (29). Turn barrel (20)  $\frac{1}{3}$ -turn clockwise and allow slide to go forward until nose of safety can be engaged in rear notch in slide as shown at "B". Replace recoil spring (21) on barrel (20). Place slide ring (22) over end of spring and press spring back into slide as shown. When slide ring is firmly seated against face of slide, turn  $\frac{1}{4}$ -turn clockwise to lock in place

## Illustrated Definitions

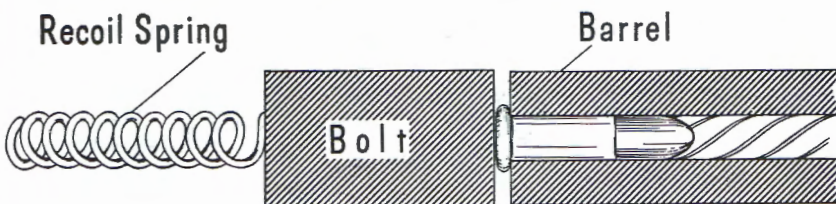
Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not intended to be technically or legalistically complete



**Submachine gun (machine pistol; machine carbine)**—Compact automatic weapon firing pistol cartridges and designed for one-man use. The typical submachine gun has a simple blowback mechanism, shoulder stock, large-capacity box- or drum-type magazine, and is arranged for either selective full- and semi-automatic fire or full automatic only. Introduced in the latter part of World War I by the Germans for close-range trench warfare, it became universally popular for both military and police use. It became well known in this country between the world wars in a version known as the Tommy gun (named after its designer, Gen. John T. Thompson). During World War II, U. S. soldiers originated the popular term 'burp gun' for submachine guns in general, and the U. S. M3 and M3A1 submachine guns used in World War II and the Korean War were called 'grease' guns.



**Punch and base set**—For decapping cartridge cases. A blow on the punch drives out the fired primer through a hole in the base. For decapping cartridge cases with crimped-in primers, it is also used by those wishing to minimize equipment cost.



**Blowback action**—Unlocked action in which only the mass of the breech-block and involved components (springs, etc.) resist the backward thrust of the cartridge. It is usually employed with low-pressure cartridges, and is used in submachine guns, semi-automatic pistols, .22 rimfire semi-automatic rifles and pistols, and a few makes of .22 rimfire single-shot rifles.



**Survival gun**—Specially-developed, lightweight, compact, shoulder gun included in emergency equipment of U. S. Air Force planes, and used to kill game for survival in the event of a plane being downed in uninhabited areas. Some are combination rifle-shotgun type, and others are bolt-action rifles. Illustrated is a .22-.410 with short barrels and skeletonized stock.



# BROWNING

## .380

### AUTOMATIC, POST '68

Illustrations by DENNIS RIORDAN.  
Text by LUDWIG OLSON,

**S**EMI-AUTOMATIC pistols designed by the U. S. small arms genius, John M. Browning, and produced in Belgium by Fabrique Nationale (F.N.) have an enviable reputation for simplicity, strength, and reliability. Millions of Browning pistols were produced through the years, and F. N. still manufactures them in various models and calibers.

Among the most popular Browning pistols was the Model 1910 offered in cal. .32 ACP and .380 ACP. Of simple blowback design, this compact pocket arm was an immediate success, and a great many were sold.

In 1954 the Browning Arms Co. introduced a cal. .380 ACP version of this pistol in the U. S. where it was offered for many years as the "Browning .380 Caliber Automatic Pistol". This pocket arm failed to meet requirements of the point system of the Fed-

eral Gun Control Act of 1968, and it was redesigned to qualify for importation under the 1968 regulations.

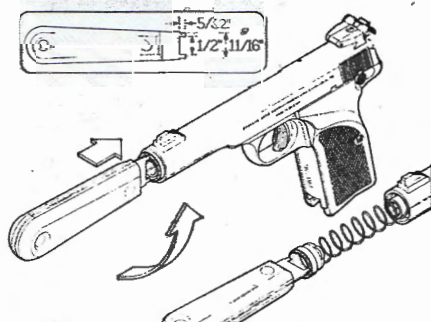
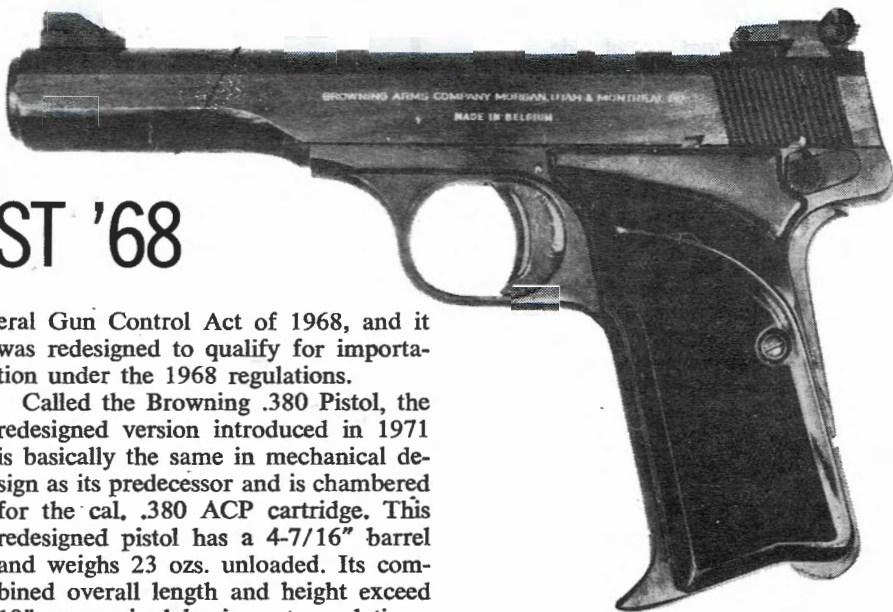
Called the Browning .380 Pistol, the redesigned version introduced in 1971 is basically the same in mechanical design as its predecessor and is chambered for the cal. .380 ACP cartridge. This redesigned pistol has a 4-7/16" barrel and weighs 23 ozs. unloaded. Its combined overall length and height exceed 10" as required by import regulations, and it is fitted with target-style sights. The fully-adjustable rear sight has a wide square notch, while the square-top front sight, which is sloped off at the rear to prevent catching on a holster, is wide and easily seen.

In addition to a thumb-operated safety on the left side of the frame, the Browning .380 has a grip safety, magazine disconnect to prevent firing when the magazine is removed, and a signal pin which extends rearward through a hole in the frame when the firing pin is cocked. Another safety feature is provided by the extractor which projects slightly from the slide to signal the

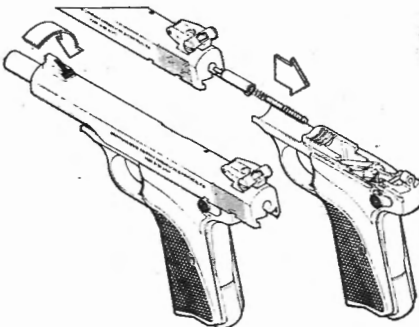
presence of a cartridge in the chamber.

The six-round magazine of this pistol is detached by pressing a magazine latch at the bottom of the frame. Extending from the lower front of the magazine is a curved extension which serves as a finger rest and facilitates magazine removal. The checkered black plastic grips are held to the frame by a single screw, and the left grip has an integral thumb rest.

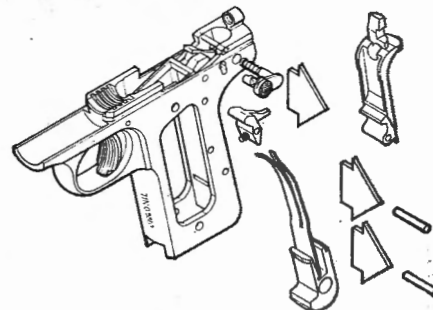
This well-made pistol with high-luster blue finish possesses generally good handling qualities. It is simple, reliable, and suitably accurate for informal target shooting and defense purposes. ■



**1** To field-strip the Browning .380, remove and unload the magazine (38). Replace the magazine, and draw the slide (19) fully to the rear. Then, check to see that the chamber is empty. Pull the trigger and engage the safety (31). Use a tool to force the slide ring (1) rearward, and rotate 1/4 turn. Hold the slide ring tightly and ease it out of the slide. (Removal and replacement of the slide ring is aided by use of a spanner tool fitted to the index cuts. The tool shown was made from a thin-bladed putty knife.) Remove the recoil spring while turning it counterclockwise as viewed from the muzzle.

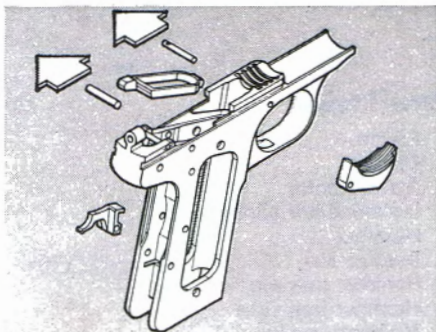


**2** Remove the magazine. Release the safety and pull the slide back until the safety can be raised into the forward slide notch. Turn the barrel (17) to the right (viewed from the rear) as far as it will go. Release the safety and move the slide forward off the frame (34). Withdraw the firing pin and signal pin with springs (13) (14) (15) (16) from the rear of the slide. Turn the barrel fully to the left and remove through the front of the slide. This completes field-stripping for normal cleaning.

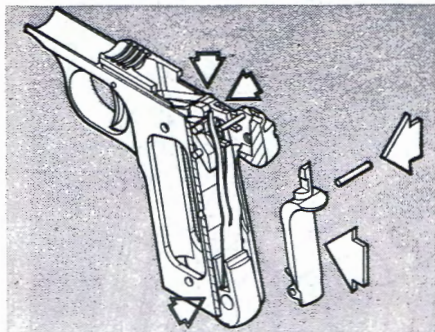


**3** If necessary to disassemble further, rotate the safety upward and withdraw the safety and safety spring (32) to the left. Unscrew and remove the grip plate screw (25), and remove the grips (20) (26). Push out the grip safety pin (33) to release the grip safety (37), sear spring (36), and magazine latch (35). Push out the magazine safety pin, and remove the magazine safety (24), taking care to avoid loss of its spring (23). In reassembling these parts, seat the large end coil of the spring in the recess at the front of the magazine safety.

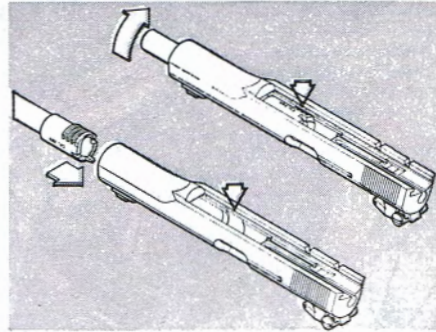




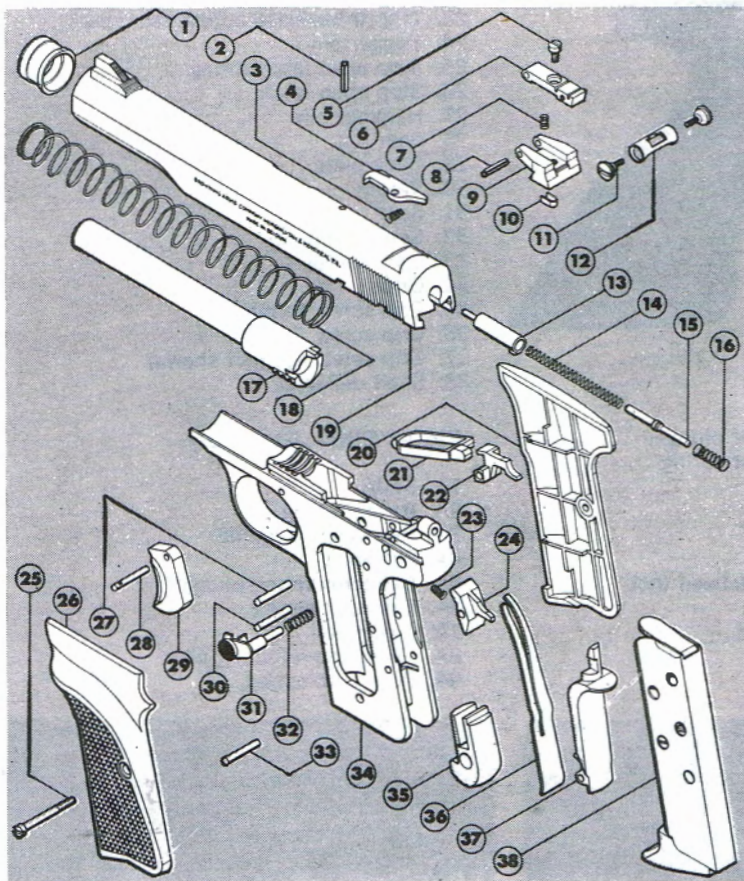
**4** Push out the sear pin (27) and withdraw the sear (22) through the rear of the frame. Slide the connector (21) rearward, and lift it out of the frame grooves. After the trigger pin (28) has been driven out, the trigger can be rotated forward and removed through the guard.



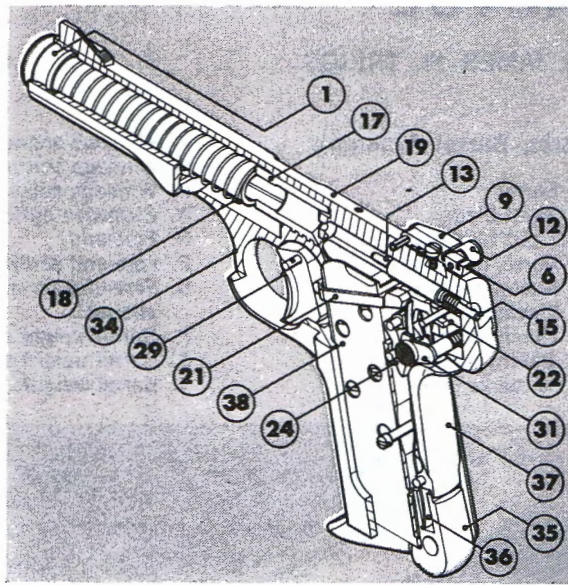
**5** Reassemble the parts in the frame in reverse order, being careful to avoid deforming the magazine safety spring. The pins for the sear, magazine safety, and grip safety are interchangeable. Install the sear spring with its hooked end seated in the groove at the front of the magazine latch cutout (arrow), split fingers contacting the connector and sear (arrows). The spring is tensioned by insertion of the grip safety.



**6** In reassembling the barrel and slide, hold the slide upside down. Insert the barrel with its multiple lugs up, and move the barrel rearward until the lugs align with the recess opposite the front of the ejection port (arrow). Rotate the barrel fully to the right to move its lugs into the slide recess (arrow). The rest of the reassembly is the reverse of field-stripping.



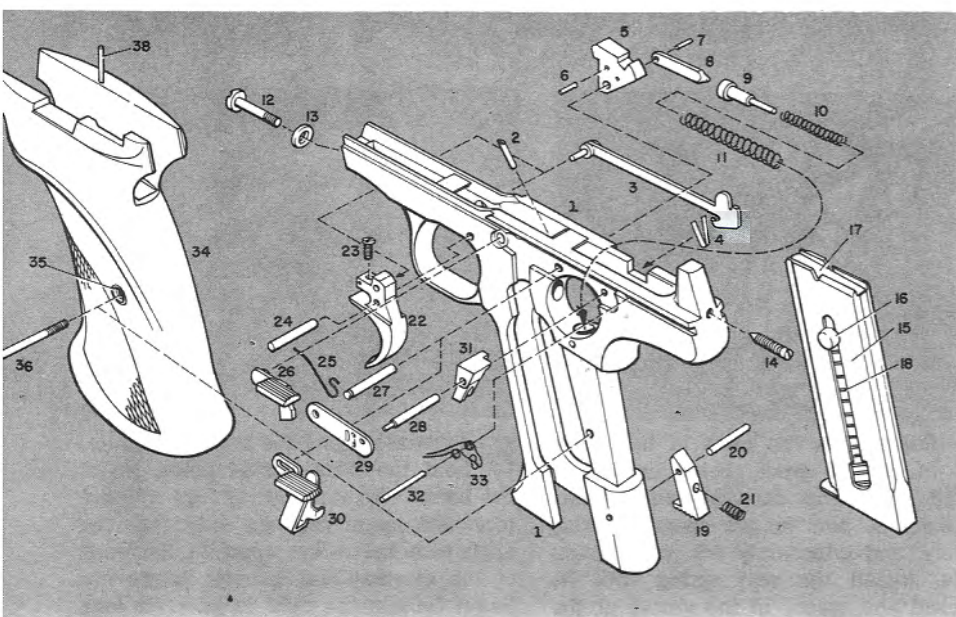
**7** Cutaway shows the relationship between the assembled parts. The pistol is shown cocked and unloaded and the safety is disengaged, but the sear is locked by the grip safety. Parts are number keyed to the parts legend.



#### PARTS LEGEND

- |                       |                    |                |                   |                      |                     |
|-----------------------|--------------------|----------------|-------------------|----------------------|---------------------|
| 1. Slide ring         | elevation          | windage (2)    | 17. Barrel        | 24. Magazine         | safety pin          |
| 2. Extractor pin      | 8. Rear sight leaf | 12. Rear sight | 18. Recoil spring | safety               | 31. Safety          |
| 3. Extractor spring   | pin                | aperture       | 19. Slide         | 25. Grip plate       | 32. Safety spring   |
| 4. Extractor          | 9. Rear sight base | 13. Firing pin | 20. Grip plate,   | screw                | 33. Grip safety pin |
| 5. Rear sight ad-     | 10. Rear sight de- | 14. Firing pin | right             | 26. Grip plate, left | 34. Frame           |
| justing screw,        | tent spring,       | spring         | 21. Connector     | 27. Sear pin         | 35. Magazine latch  |
| elevation             | elevation          | 15. Signal pin | 22. Sear          | 28. Trigger pin      | 36. Sear spring     |
| 6. Rear sight leaf    | 11. Rear sight ad- | 16. Signal pin | 23. Magazine      | 29. Trigger          | 37. Grip safety     |
| 7. Rear sight spring, | justing screw,     | spring         | safety spring     | 30. Magazine         | 38. Magazine        |





### Parts Legend

1. Frame
2. Ejector
3. Disconnecter
4. Disconnecter spring
5. Hammer
6. Dry-fire pin
7. Hammer link pin
8. Hammer link strut
9. Mainspring plunger
10. Mainspring, inner
11. Mainspring, outer
12. Barrel mounting screw
13. Barrel mounting screw washer
14. Trigger pull adjustment screw
15. Magazine body
16. Magazine button
17. Magazine follower
18. Magazine spring
19. Magazine latch
20. Magazine latch pin
21. Magazine latch spring
22. Trigger
23. Trigger backlash adjustment screw
24. Trigger pin
25. Stop open latch spring
26. Stop open latch
27. Hammer pin
28. Sear pin
29. Click plate
30. Safety
31. Sear
32. Sear spring pin
33. Sear spring
34. Grips
35. Grip screw washer
36. Grip screw
37. Grip screw nut (not shown)
38. Shell deflector



# BROWNING MEDALIST PISTOL

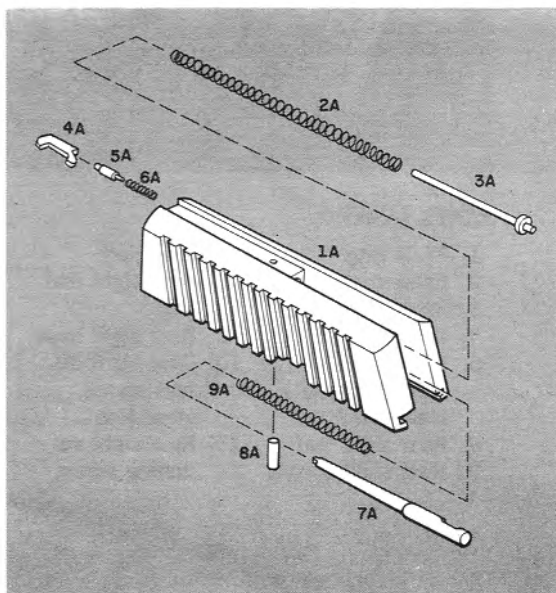
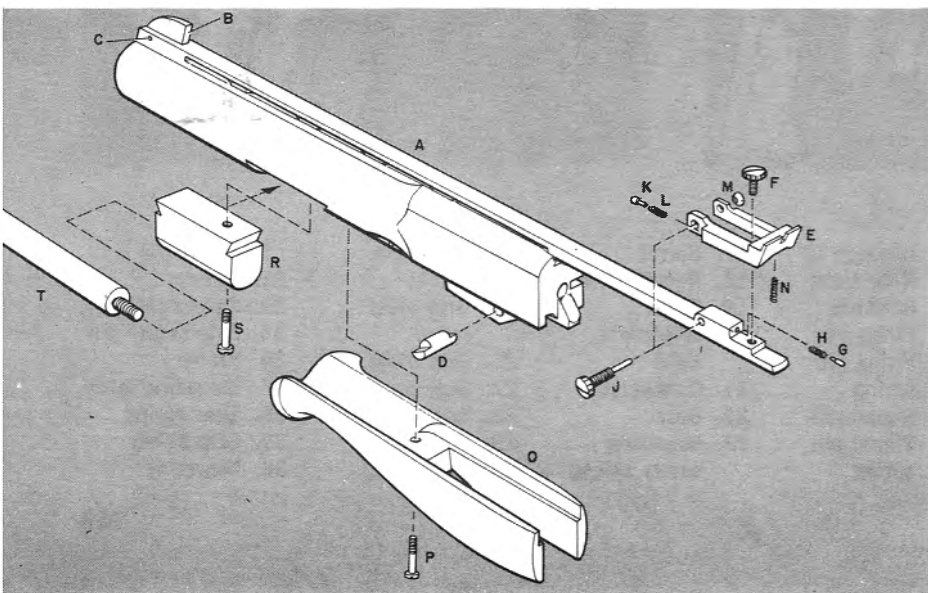
By JAMES M. TRIGGS

### Parts, Barrel Assembly

- |                          |  |
|--------------------------|--|
| A. Barrel                | K. Windage screw detent plunger          |
| B. Sight blade           | L. Windage screw detent spring           |
| C. Sight blade pin       | M. Windage screw nut                     |
| D. Barrel guide pin      | N. Elevation spring                      |
| E. Rear sight base       | O. Fore-end                              |
| F. Elevation screw       | P. Fore-end screw                        |
| G. Detent plunger        | Q. Fore-end screw escutcheon (not shown) |
| H. Detent plunger spring | R. Barrel weight support                 |
| J. Windage screw         | S. Barrel weight screw                   |
|                          | T. Barrel weights (3)                    |

### Parts, Slide Assembly

- |                              |
|------------------------------|
| 1A. Slide                    |
| 2A. Recoil spring            |
| 3A. Recoil spring guide      |
| 4A. Extractor                |
| 5A. Extractor spring plunger |
| 6A. Extractor spring         |
| 7A. Firing pin               |
| 8A. Firing pin retaining pin |
| 9A. Firing pin spring        |





**T**HE Browning Medalist cal. .22 long rifle semi-automatic pistol was introduced in 1962. Made in Belgium, and sold in the United States by the Browning Arms Co., St. Louis, Mo., the Medalist pistol was designed for precision target shooting.

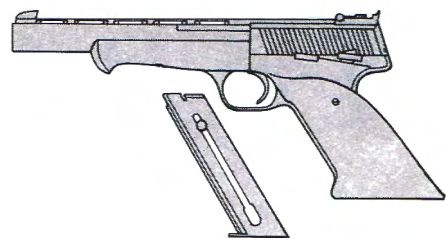
It is regularly furnished with a hand-filling thumb-rest target grip and a set of 3 accessory barrel weights. The sight rib carrying both front and rear sights is permanently attached to the barrel. The rear sight is fully adjustable by means of coin-slotted screws.

There is a dry-fire device made in combination with the mechanical safety. By activating this device the shooter can conduct realistic 'snapping in' or dry-fire exercises without retracting the slide

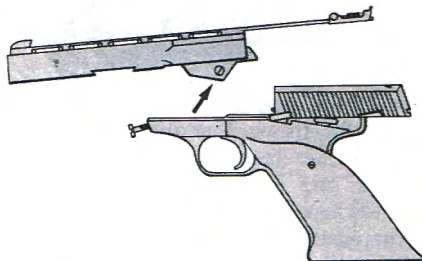
to cock the lock mechanism before each shot. Using the dry-fire device, the sear can be engaged with the hammer by light downward thumb pressure against the safety latch. The dry-fire device must be inactivated before the pistol can be fired with live ammunition.

Another interesting feature of the Medalist pistol is the shell deflector pin installed on the right upper side of the grip opposite the breech. This vertical pin prevents ejection of fired cases into the faces of shooters on the firer's right.

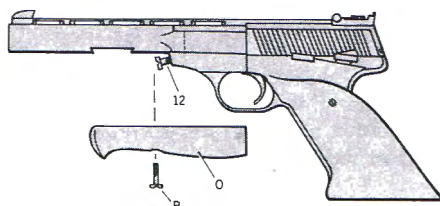
The detachable magazine of the Medalist pistol holds 10 cal. .22 long rifle cartridges. The trigger is screw-adjustable for overtravel and weight of pull. The breech remains open after firing the last shot in the magazine.



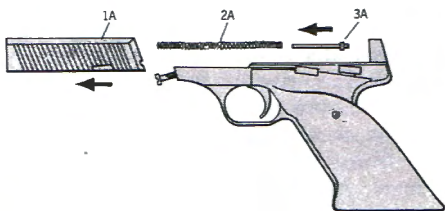
**1** Check action to be sure pistol is unloaded and then remove the magazine. Pistol is shown assembled with the magazine removed.



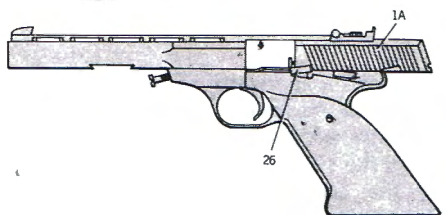
**4** Slide barrel assembly rearward and upward to disengage it from the frame as shown.



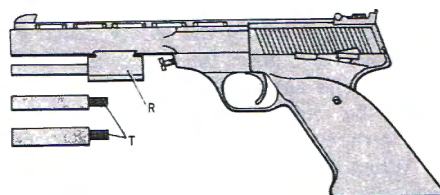
**2** Loosen fore-end screw (P) and remove fore-end (O). Loosen barrel mounting screw (12) until it is felt to disengage from threads in barrel.



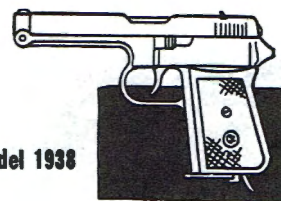
**5** Press down on stop open latch (26), releasing slide (1A). Pull slide off front end of frame taking care not to allow compressed recoil spring (2A) to escape. Remove spring and recoil spring guide (3A). Further disassembly is not recommended.



**3** Pull slide (1A) all the way back and lock back by pressing up on stop open latch (26).



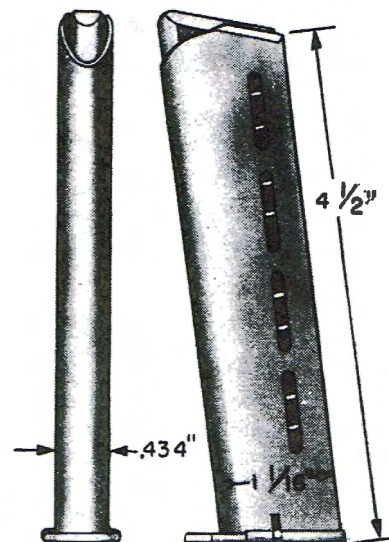
**6** Pistol is shown with barrel weight support (R) fastened into dovetail under barrel with one of 3 barrel weights (T) assembled to support. ■



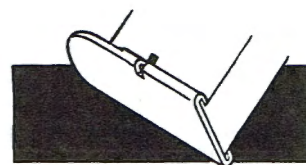
Czech Model 1938

## PISTOL MAGAZINES

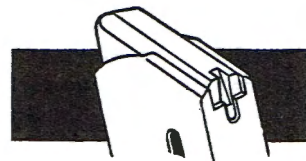
One of a series



The .380 ACP cal. CZ Model 1938 was manufactured in Czechoslovakia at the government arsenal all during World War II. It is a well-made blowback-operated gun. Its hinged slide and barrel make it easy to clean and service. The design incorporates a rather odd trigger mechanism. Unlike most double-action pistols, the hammer does not stay cocked between shots but follows the slide forward. The trigger must then be pulled all the way to cock the hammer and fire the next shot.

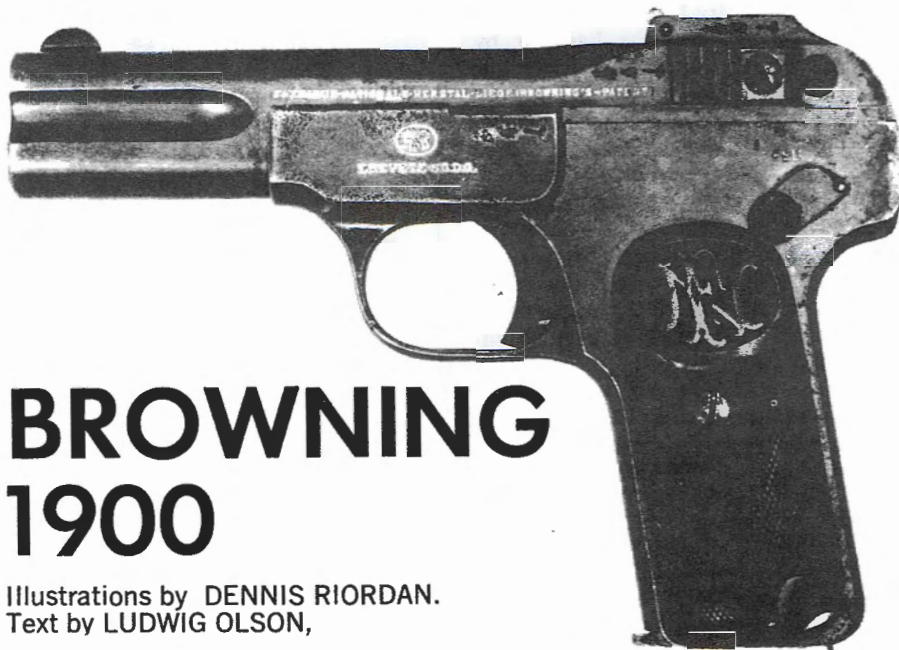


CZ 38 magazines are dead-ringers for the 1910 Mauser magazines except that they are about one-third longer, and have more observation slots in the left side. The floorplate is removable and can be recognized by the cut that retains the tail of the follower spring.



Like the 1910 Mauser, the follower is machined from solid stock. It can be recognized by the milled groove that extends from the backstrap up into the rear of the follower as shown.—E. J. HOFFSCHMIDT





# BROWNING 1900

Illustrations by DENNIS RIORDAN.  
Text by LUDWIG OLSON,

**I**N April, 1897, John M. Browning of Ogden, Utah, met Hart O. Berg, commercial director of the F. N. (Fabrique Nationale) armsmaking firm, Herstal, Belgium. This important meeting began a relationship which resulted in F. N. producing a variety of Browning-designed small arms, among them a blowback-operated semi-automatic pistol chambered for the .32 ACP cartridge.

Commonly called the Model 1900, this pistol was first produced in Jan., 1899. It was the first Browning-designed pistol to be put into production and the first arm chambered for the .32 ACP cartridge, which was also a Browning development.

There are various names for this pistol. While it is commonly called Model 1900, it is listed as Model 1899 in the official history of the F. N. firm. A German Burgsmueller arms catalog of 1912 called it the original Browning repeating pistol, large model and did not give a model designation. The Model 1900 designation used in this article is by far the most popular and commonly used for this arm.

The Model 1900 became popular immediately, and was sold in large quantity. In 1900, this pistol was adopted by the Belgian government for arming its officers, and it was also used extensively by police in many European cities. By 1909, 500,000 of this model had been produced, and it was discontinued about 1912 when the Browning Model 1910 pistol was introduced.

Weighing only 22 ozs. unloaded and measuring 6 $\frac{3}{8}$ " in overall length, the Model 1900 is an excellent pocket arm. Its detachable magazine which holds seven rounds is released by pressing

forward the magazine catch at the lower rear of the frame. Handling qualities of the pistol are generally favorable except that the grip is almost at a right angle with the line of bore, which is not good for natural pointing.

Screwed rigidly into the frame, the barrel is housed in the slide under the recoil spring. The breechblock is fastened to the slide with two screws, and holds the cocking lever, firing pin, and extractor. A V notch in the top of the breechblock serves as the rear sight. The front sight is on the slide.

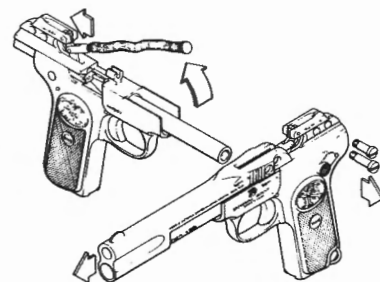
A very clever and desirable feature of this pistol is that the recoil spring is also used to drive the firing pin. Another clever feature is the method of attaching the checkered hard rubber grips to the frame by means of concealed retainers. After the grip screws are loosened, the retainers can be turned out of engagement with a screwdriver or similar tool inserted in the magazine opening of the frame. The grips are then easily removable to facilitate cleaning.

The safety on the upper left side of the frame is on safe when pivoted upward. With the safety in this position, the sear and the slide and breechblock assembly are blocked, and the marking "SUR" (French for safe) is exposed on the frame. Turning the safety down to fire position exposes the marking "FEU" (fire). The safety can also be used to latch the slide and breechblock assembly to the rear—a very desirable feature.

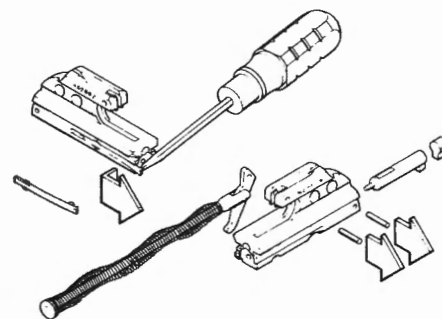
When the pistol is uncocked, the upper tip of the cocking lever projects above the breechblock in such a manner that it blocks the line of sight. It is thus possible to determine by sight or touch whether the pistol is cocked.

The Model 1900 had such an excellent reputation for sound design and

reliability that several of its features were used in other makes of European-produced pistols. Also, many crude copies of the Model 1900 were turned out. These are generally believed to be of Oriental origin, although it is not actually known who produced them. Original specimens produced by F. N. are of high-quality workmanship and finish throughout. Most have blued finish and hard rubber grips, although it was possible to obtain nickel-plated specimens with mother-of-pearl grips at extra cost. ■

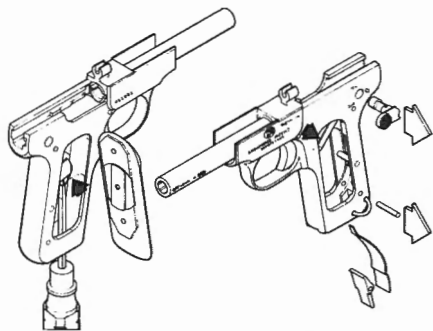


**1** Push the magazine catch (25) forward and remove the magazine (9). Release the safety (19). Draw the slide (4) fully to the rear and check visually that the chamber is empty. Release the slide and pull the trigger. Unscrew and remove the breechblock screws (5) (6), and move the slide forward off the frame (26). Lift the forward end of the recoil spring (1) until it snaps free of the frame. Withdraw the breechblock (11) to the rear. This is sufficient disassembly for normal cleaning. Disassemble further only as required.

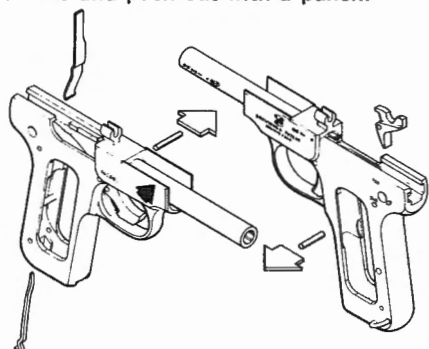


**2** Insert a narrow screwdriver blade beneath the hook of the extractor (14). Push the extractor outward until its lug clears the side of the breechblock. Then, pry the extractor forward, bringing its wings into alignment with the disassembly hole. Drift out the cocking lever pin (27), and remove the recoil spring mechanism. Drift out the breechblock plug pin (30) to release the breechblock plug (32) and firing pin (31).

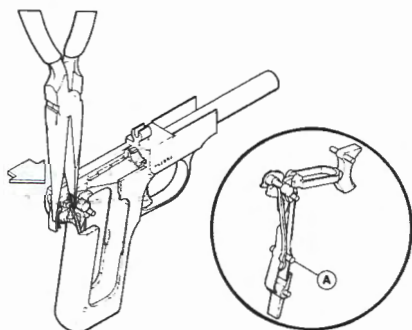




**3** To release the grips (10 (16)), first loosen the grip screws (15) and turn the grip retainers (17) from horizontal to vertical with a screwdriver inserted through the bottom of the magazine well. Drift out the magazine catch pin (24), and remove the magazine catch (25) and trigger bar spring (29). Pull the forward end of the trigger bar (22) downward into the magazine well and remove. Move the safety midway between safe and fire positions and push out with a punch.



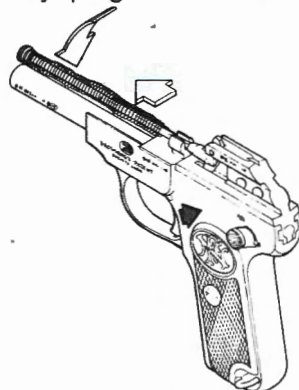
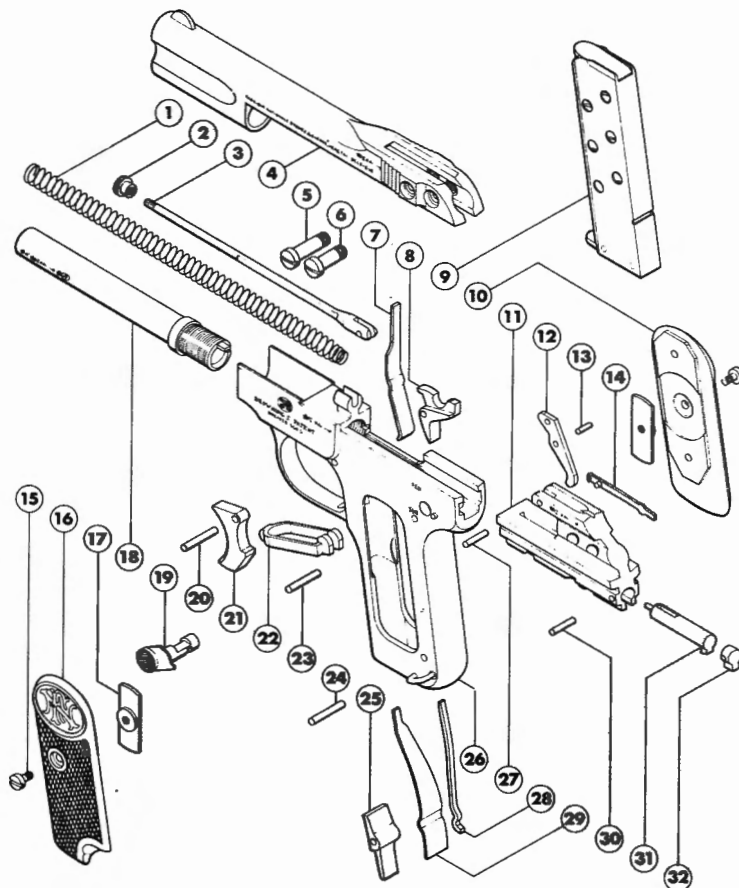
**4** Drift out the sear pin (23) and lift out the sear (8). Push the safety spring (28) downward and remove through the underside of the frame. Center the sear spring (7) in the frame with a screwdriver blade, and push upward to remove. Drift out the trigger pin (20), roll the bottom of the trigger forward, and remove through the side of the trigger guard.



**5** In reassembly, replace the trigger and trigger pin, and install the sear spring through the top of the frame. Align the spring vertically, and lever it horizontally against the left side of the frame. Insert the tail of the sear between the sear spring and frame backstrap, and replace the sear pin. Install the safety spring from below, sliding it upward

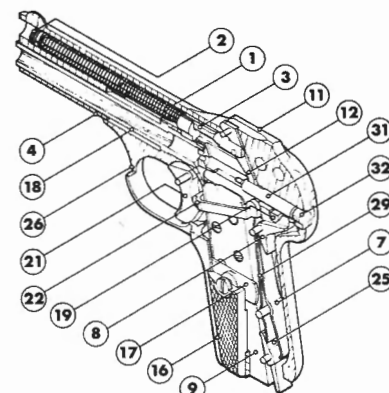
## PARTS LEGEND

1. Recoil spring
2. Recoil spring guide nut
3. Recoil spring guide
4. Slide
5. Breechblock screw (long)
6. Breechblock screw (short)
7. Sear spring
8. Sear
9. Magazine
10. Right grip
11. Breechblock
12. Cocking lever
13. Recoil spring guide pin
14. Extractor
15. Grip screw (2)
16. Left grip
17. Grip retainer (2)
18. Barrel
19. Safety
20. Trigger pin
21. Trigger
22. Trigger bar
23. Sear pin
24. Magazine catch pin
25. Magazine catch
26. Frame
27. Cocking lever pin
28. Safety spring
29. Trigger bar spring
30. Breechblock plug pin
31. Firing pin
32. Breechblock plug



**6** Safety must be disengaged to install the breechblock. Depress the trigger and start the breechblock assembly into the frame until resistance is felt, then release the trigger and push the breechblock fully home. Again depress the trigger and pull forward on the recoil spring to release the firing pin from the sear. Grasp the rear of the recoil spring tightly and pull forward over the recoil spring guide (3), until the assembly can be swung down within the frame fork.

against the right side of the frame and behind the sear. Flex the safety spring with padded long nose pliers when installing the safety. Inset shows proper location of springs in the frame. All seat upon the fixed frame pin (A), which is never removed.



**7** Cutaway shows the relationship between parts. Pistol is shown cocked and unloaded with the manual safety disengaged. Parts are number keyed to the parts legend.



# BROWNING SWEDISH MODEL 1907 PISTOL



By E. J. HOFFSCHMIDT

**T**HE Swedish Model 1907 semi-automatic pistol was designed by John M. Browning, the U. S. arms inventor. Chambered for the 9 mm. Browning Long cartridge, this well-made blowback-operated pistol was produced by Fabrique Nationale (FN) in Belgium and Husqvarna Vapenfabriks Aktiebolag (Husqvarna Arms Factory, Inc.) in Sweden.

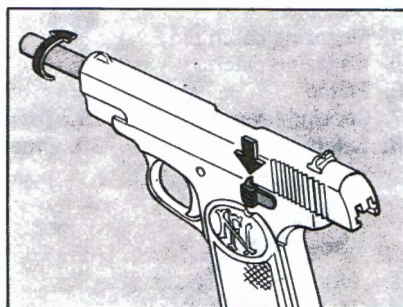
Of concealed-hammer type, the pistol is simple and compact, and has a good grip and balance. It has a detachable 7-round magazine, a manual safety, a grip safety, and a slide stop that holds the slide open after the last cartridge is fired. The grip safety also serves as a cocking indicator, since it projects rearward only when the hammer is cocked.

During World War II, the Model 1907 was superseded in the Swedish Service by Walther and Lahti pistols chambered for the 9 mm. Luger cartridge. However, the Model 1907 was retained for several years as a substitute-standard sidearm.

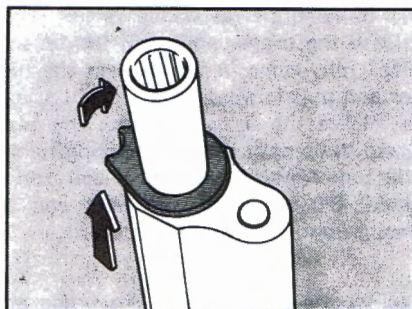
In the late 1950's, a quantity of Model 1907 pistols was imported into the U.S. and sold as military surplus. Many of these were converted to fire the .380 Automatic cartridge, and were stamped "CAL 380" on the left of the receiver. Converted specimens are accurate but give feeding and ejection malfunctions.

While the 9 mm. Browning Long cartridge is not produced in the U.S., it has been imported by military surplus arms dealers in sufficient quantity for shooting. It has a semi-rim straight case slightly longer than that of the .380 Automatic cartridge. A typical factory load has a 110-gr. round-nose full-jacketed bullet driven at 1000 feet per sec-

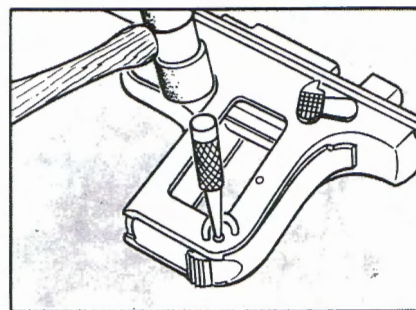
ond (f.p.s.) muzzle velocity. The muzzle energy is 244 ft. lbs.



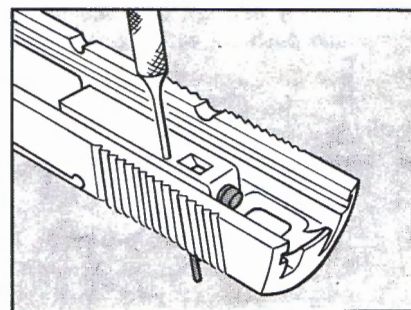
**1** To disassemble the pistol, first remove the magazine (30) and clear the chamber. Pull back the slide (1) and push the safety (31) upward to engage it with the forward notch in the slide. Turn the barrel (10) 90° to lock it into the slide. While holding the slide, release the safety from the slide notch, and strip the slide, barrel, and recoil spring (13) off the front of the receiver (34). Also remove the slide stop (19) from the receiver.



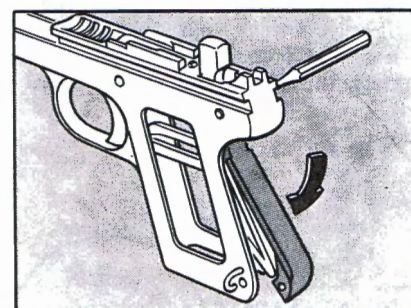
**2** Remove the recoil spring guide (14), and bushing stop (12). To remove the barrel bushing (11), rotate it 180° as shown and lift it free of the slide. Rotate the barrel to free it from the recess in the slide. Then pull the barrel out forward.



**3** Unscrew the grip screw (33), and remove the grips (23) and (32). While holding the hammer (20) firmly, pull the trigger (27), and ease the hammer forward. Drift the grip safety pin (28) out to the right, cock the hammer, pivot the safety upward, and lift it from the receiver. Remove the hammer, ejector (15), grip safety (24), hammer safety pin (25), sear spring (26), and the magazine catch (29). Drift out sear pin (18); remove sear (17), disconnector (16), and trigger.

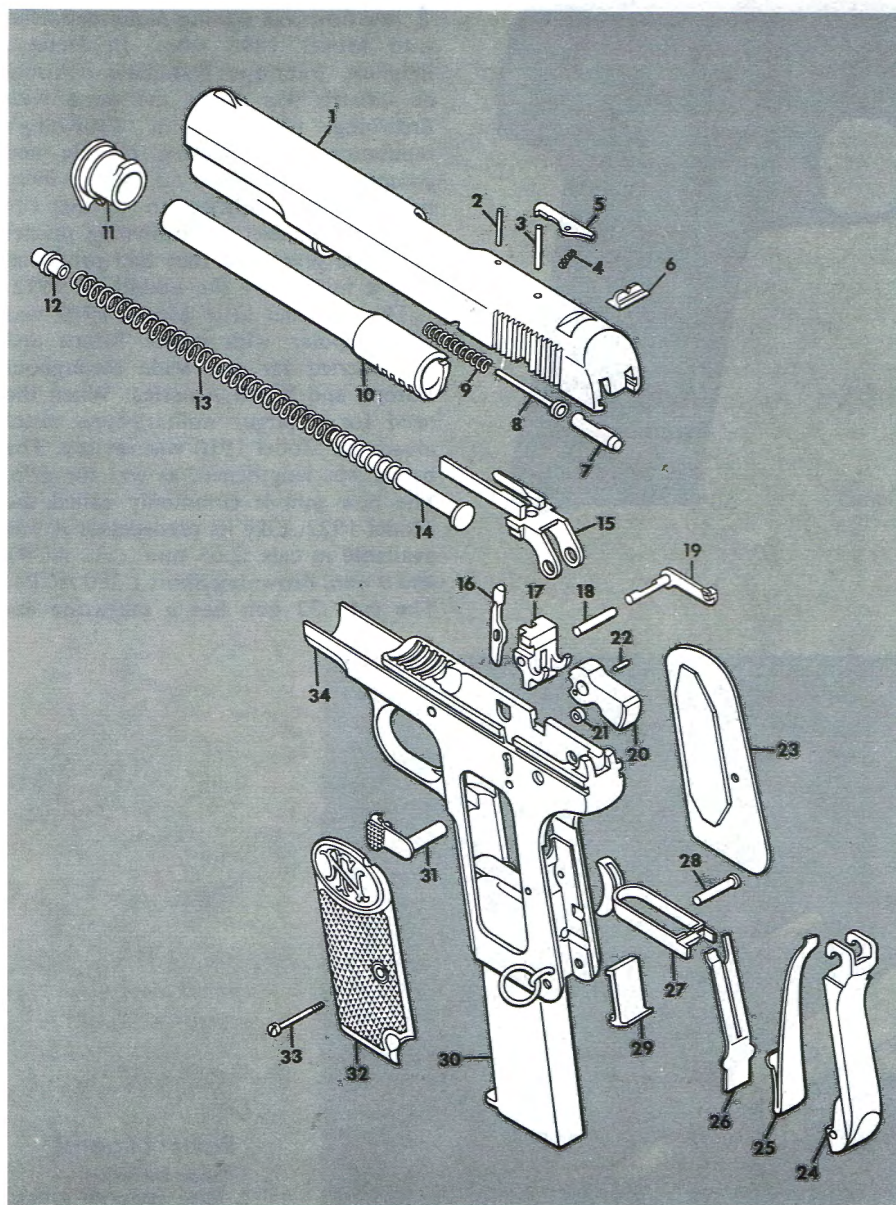


**4** The firing pin (8) and firing pin extension (7) are retained by a long pin (3). Drive this pin out of the slide using the correct-size punch. The extractor (5) is retained by a shorter pin (2). When replacing the retaining pins, be sure they are driven in to proper depth so that they do not drag on the receiver and scar it.



**5** In reassembling the lock mechanism, replace the trigger, sear, disconnector, and sear pin. Then install the ejector, engaging the disconnector. Replace the magazine catch, sear spring, hammer spring, and grip safety, and put the hammer in position with the hammer roll behind the hammer spring. Use a punch to align hole in hammer with hole in receiver. Then pull the trigger down, and insert the safety in the receiver part way. Pressing forward on grip safety, align holes in grip safety and receiver using punch and insert pin from right. Cock the hammer, and push safety in all the way.

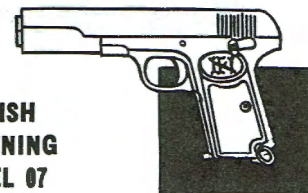




### Parts Legend

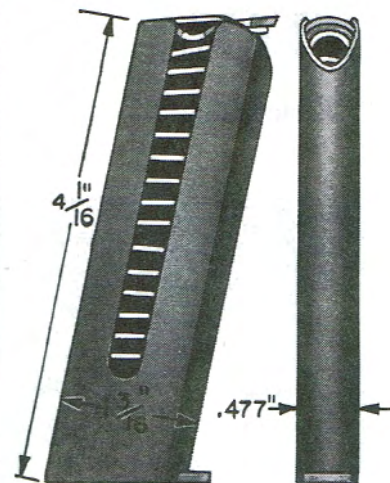
- |                                 |                     |
|---------------------------------|---------------------|
| 1. Slide                        | 17. Sear            |
| 2. Extractor pin                | 18. Sear pin        |
| 3. Firing pin retainer pin      | 19. Slide stop      |
| 4. Extractor spring             | 20. Hammer          |
| 5. Extractor                    | 21. Hammer roll     |
| 6. Rear sight                   | 22. Roll axis pin   |
| 7. Firing pin extension         | 23. Right grip      |
| 8. Firing pin                   | 24. Grip safety     |
| 9. Firing pin spring            | 25. Hammer spring   |
| 10. Barrel                      | 26. Sear spring     |
| 11. Barrel Bushing              | 27. Trigger         |
| 12. Bushing stop                | 28. Grip safety pin |
| 13. Recoil spring               | 29. Magazine catch  |
| 14. Recoil spring guide         | 30. Magazine        |
| 15. Ejector and cartridge guide | 31. Safety          |
| 16. Disconnecter                | 32. Left grip       |
|                                 | 33. Grip screw      |
|                                 | 34. Receiver        |

### SWEDISH BROWNING MODEL 07



## PISTOL MAGAZINES

One of a series



Most of the Swedish Model 07 FN Browning pistols in this country were imported after World War II. Although only an enlarged version of the Browning pocket pistol, it fires the fairly powerful 9 mm. Long Browning cartridge. The gun is unusual in that the hold-open lock is on the right side and has no thumb lever to unlock it. When the magazine is released and the slide pulled back, the lock drops free. Though these guns were in the Swedish service for about 50 years, they are generally in excellent condition and are well made and finished.



The Model 07 magazine is distinctive in that one side has a solid wall, while the other is cut out  $\frac{3}{4}$  of the way down. This long cut allows the follower lip to extend out far enough to lift the hold-open lock when the last shot is fired.



The magazine floorplate is pinned in place and can be recognized best by the squared-off tip on its front end.—E. J. HOFFSCHMIDT



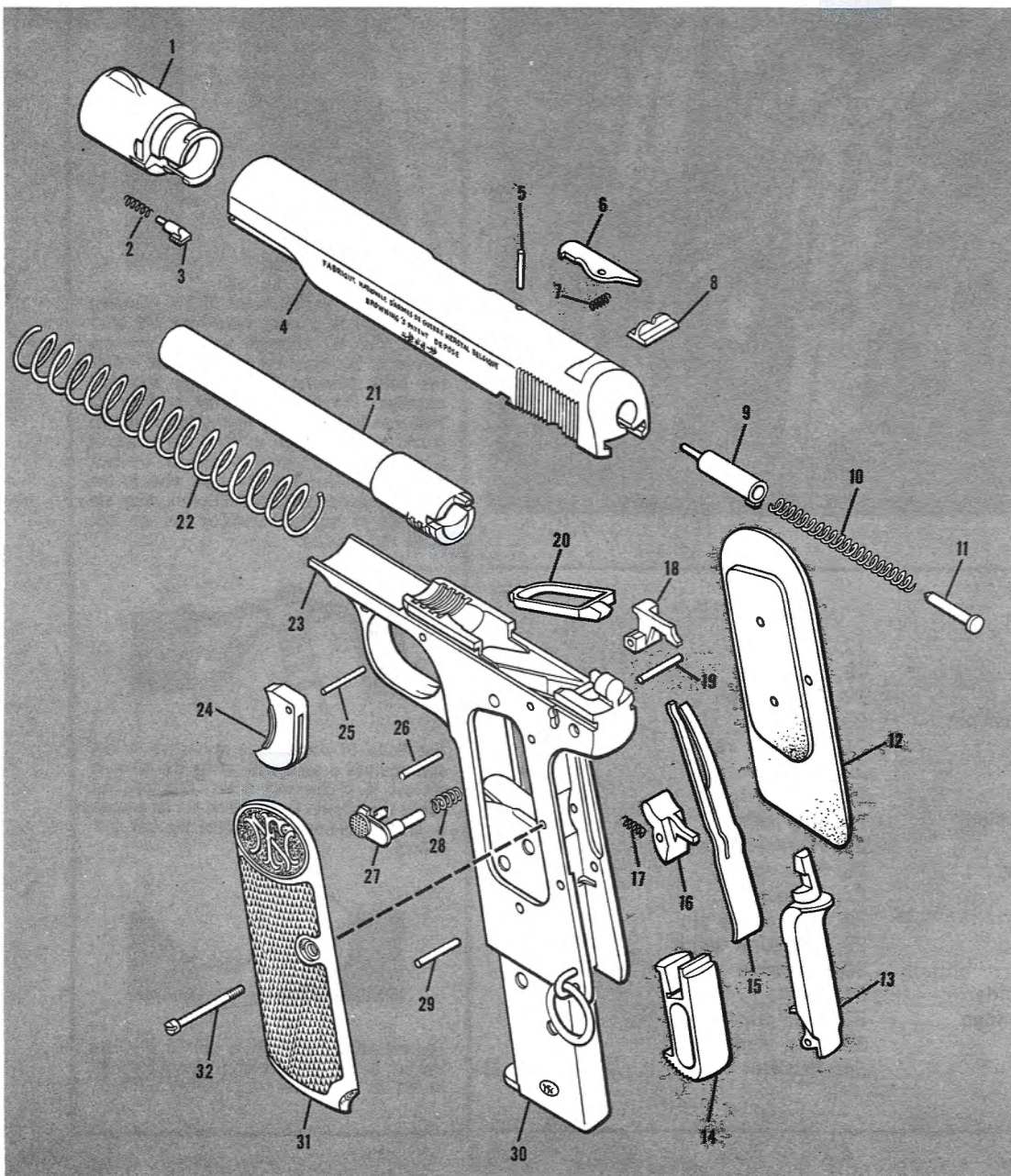
# BROWNING MODEL 1922 PISTOL

By E. J. Hoffschmidt



IN the early and mid-1900's, the Mauser firm was arming many countries with Model 1898 rifles. In Herstal, Belgium, Fabrique Nationale d'Armes de Guerre was doing the same with Browning pistols. John Browning's reputation for designing reliable and compact pistols needs no further mention here; it is sufficient to say that FN found the market for Browning pocket pistols so great that they had produced over a million by the middle of 1912.

The compact little Model 1910 was very popular with police forces and was carried far and wide throughout Europe and South America. When the need for a larger military-type pistol arose, the Model 1910 was revised. The barrel was lengthened, as was the grip. The new gun is commonly called the Model 1922. Like its predecessor it was available in cal. 7.65 mm. (.32 ACP) and 9 mm. Browning Short (.380 ACP). The cal. .32 gun has a magazine ca-



## Parts Legend

1. Slide extension
2. Slide extension spring
3. Slide extension catch
4. Slide
5. Extractor pin
6. Extractor
7. Extractor spring
8. Rear sight
9. Firing pin
10. Firing pin spring
11. Spring follower
12. Right grip
13. Grip safety
14. Magazine catch
15. Mainspring
16. Magazine safety
17. Magazine safety spring
18. Sear
19. Magazine safety pin
20. Trigger bar
21. Barrel
22. Recoil spring
23. Frame
24. Trigger
25. Trigger pin
26. Sear pin
27. Safety catch
28. Safety catch spring
29. Grip safety hinge pin
30. Magazine
31. Left grip
32. Grip screw

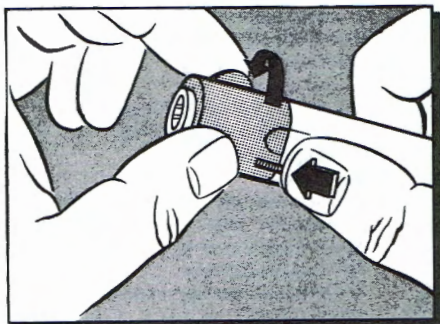


capacity of 9 rounds and was issued to French, Belgian, Dutch, and Danish officers before World War II. The cal. .380 gun, with 8-round magazine capacity, was even more popular. It was issued to police and army officers in Poland, Czechoslovakia, Yugoslavia, Holland, Sweden, France, and Belgium, and was widely used in Central and South America.

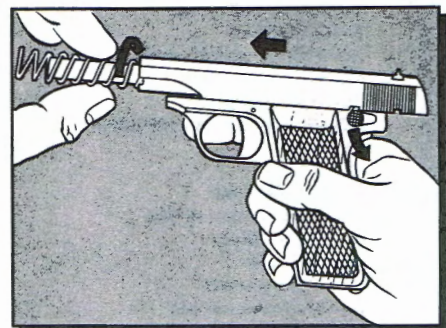
The Model 1922 is a simple and reliable gun. While not a true military

arm by American standards, its fine grip and good balance make it an excellent choice for offense or defense. It has a straight blowback action, and the takedown procedure is simple—the gun can be stripped in a matter of seconds. Aside from the difference in calibers and national crests or markings, there are 2 variations: the pre-war gun with fine finish, and the crude revised gun made under German occupation. The Germans apparently liked the Model 1922 and issued all that FN produced.

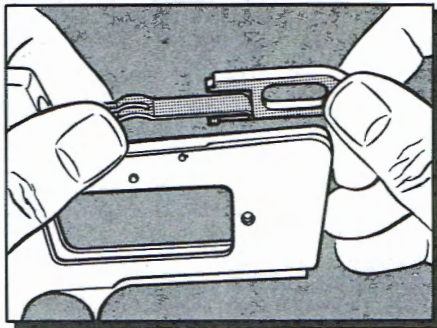
As the war progressed, the Germans simplified the gun to save materials and machine time. They eliminated the magazine safety and simplified some internal parts. The hard rubber grips with the FN trademark were replaced by crude wooden grips. The trigger was simplified by eliminating the comfortable trigger shoe effect found on pre-war guns. The lanyard loop was dropped and the fine finish and polish eliminated. It is interesting to note that while putting their Ordnance proofmarks on the guns, the Germans allowed the FN firm to mark the pistols with their trade name and not the 'ch' code that had been assigned to FN.



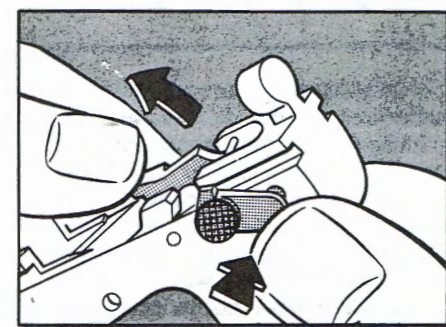
**1** To strip the Model 1922, first remove the magazine and clear chamber. Push small serrated slide extension catch (3) forward, until it is clear of slide. Rotate extension about 1/4 turn as shown, until it snaps free of slide



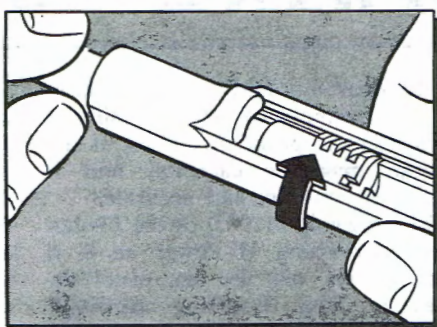
**2** Pull back slide (4) until safety catch (27) can be engaged in forward notch. Rotating barrel (21) as shown will free it from recesses in frame. Now release safety catch and pull slide and barrel off front of frame



**4** If gun is disassembled further, entire sear mechanism can be easily checked by removing the grips and pushing out grip safety hinge pin (29). When replacing mainspring (15), be sure tail is engaged in corresponding notch in magazine catch (14) as shown

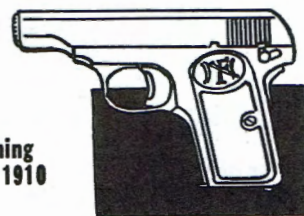


**3** To remove safety catch (27), push up as far as it will go and it will snap out. To replace safety, push it in as far as it will go, then snap it down to fire position. Be sure sear (18) is pivoted clear before pushing safety all the way in



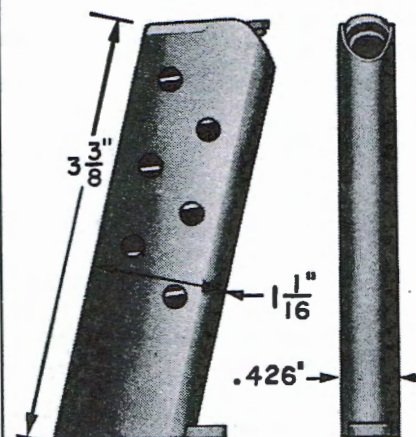
**5** When reassembling gun, insert barrel into slide until barrel lugs line up with cut in slide. Then rotate barrel as far as it can go. It is now in position to allow slide to be assembled to frame

Browning  
Model 1910



## PISTOL MAGAZINES

One of a series



By 1910 John Browning had designed numerous automatic pistols, and the Model 1910 shows the results of this experience. The gun is simple, compact, and extremely well made. It was widely used as a police and service weapon in several countries, including Peru and Japan. While it was manufactured in both cal. .32 ACP and .380 ACP, the former caliber is by far the most common. While the Model 1910 incorporates none of the more modern features such as double-action trigger pull, it is nevertheless a very fine pocket pistol.

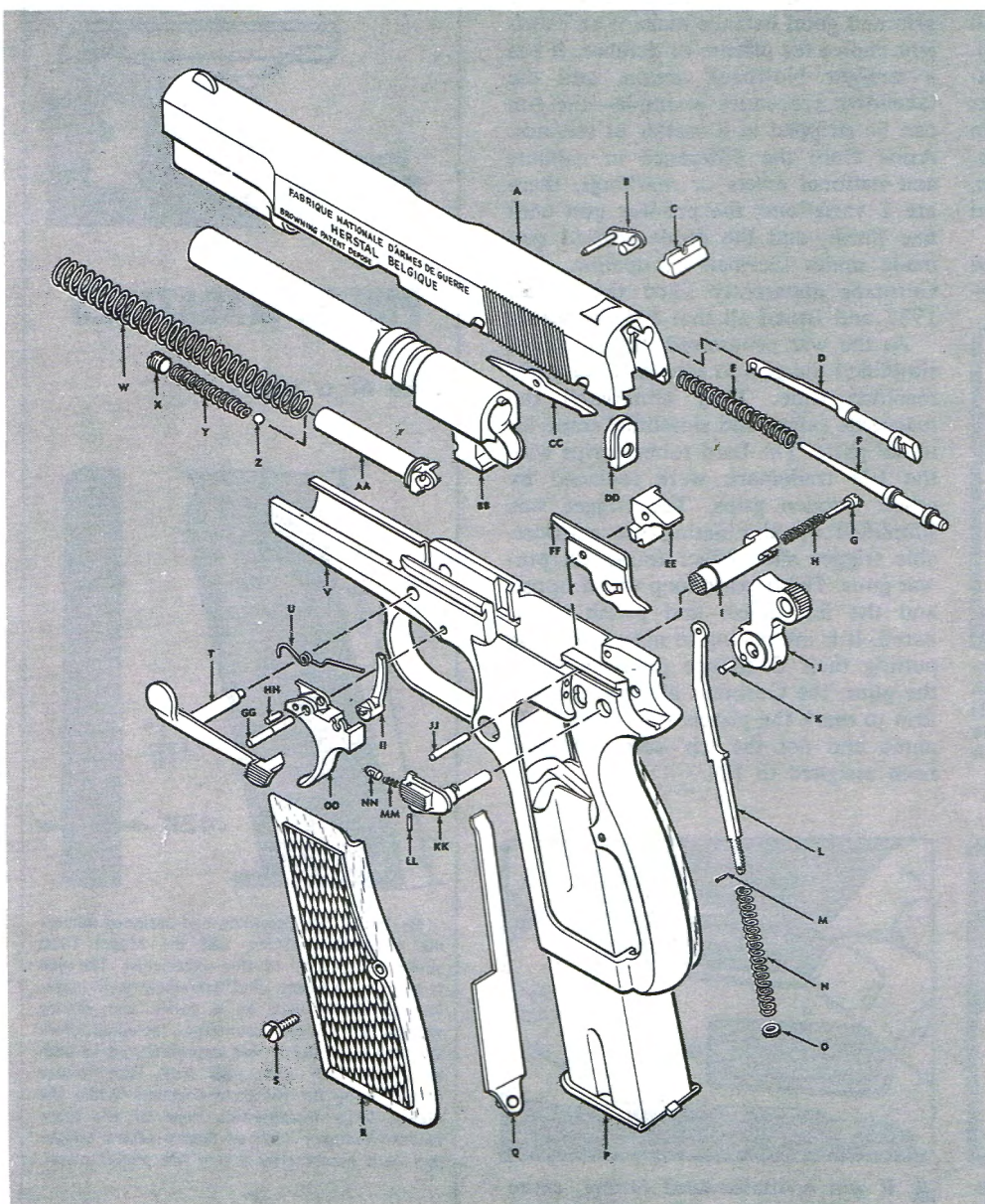


Model 1910 magazines are generally well made and can usually be recognized by the (Fabrique Nationale) trademark on the side. They can easily be confused with Browning Model 1922 magazines since the 2 are identical except for length. The Model 1910 is the shorter by about 1/2".



While the flat, stamped followers sometimes show a tendency to cock, the rest of the magazine is very well made and gives reliable service.—E. J. HOFFSCHMIDT





## Legend

- A—Slide
- B—Sear lever retainer
- C—Rear sight
- D—Extractor
- E—Firing pin spring
- F—Firing pin
- G—Magazine catch spring guide
- H—Magazine catch spring
- I—Magazine catch
- J—Hammer
- K—Hammer pin
- L—Hammer strut
- M—Hammer strut pin
- N—Hammer spring
- O—Hammer spring support
- P—Magazine
- Q—Sear spring
- R—Left-hand grip
- S—Grip screw
- T—Slide stop
- U—Trigger spring
- V—Frame (receiver)
- W—Recoil spring
- X—Spring retainer
- Y—Detent ballspring
- Z—Detent ball
- AA—Recoil spring guide
- BB—Barrel
- CC—Sear Lever
- DD—Firing pin retainer plate
- EE—Sear
- FF—Ejector
- GG—Trigger pin
- HH—Trigger spring pin
- II—Trigger lever
- JJ—Sear pin
- KK—Safety catch
- LL—Stud retainer pin
- MM—Stud spring
- NN—Stud
- OO—Trigger

# M35 BROWNING HI-POWER

By E. J. Hoffschmidt

THE Browning Hi-Power is an excellent example of what a military semi-automatic pistol should be. It has a large magazine capacity, and is rugged, dependable, and accurate.

The Browning M1935, or the 13-shot 9 mm. Browning Hi-Power as it is better known, was the last pistol designed by John Browning. Although patented in 1927, the gun was not produced until 1935, when it was manufactured by Fabrique Nationale for the French Colonial troops. Later, a shorter 10-shot version was produced by Fabrique Nationale for the Belgian government.

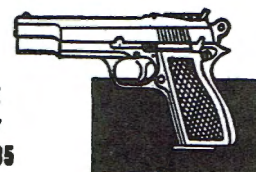
The original large model was also manufactured, under license, by the John Inglis Co. of Canada, which made the gun in 2 models during World War II for the Chinese Government. The first model was a standard holster gun with fixed sights; the second had an adjustable rear sight and was machined to take an attachable holster stock for long-range shooting.

Made in 9 mm. Luger caliber, the M35 Browning Hi-Power has a double-row clip which holds 13 cartridges. It has a barrel of 4 $\frac{7}{8}$ " in length and measures 7 $\frac{3}{4}$ " long over-all. Weight empty is 2 lbs.



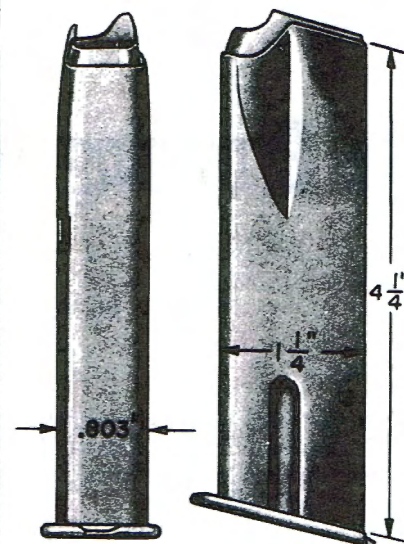


M35 Browning Hi-Power

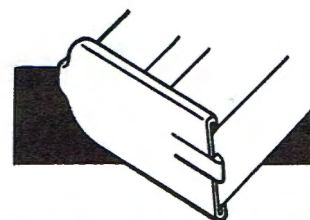


## PISTOL MAGAZINES

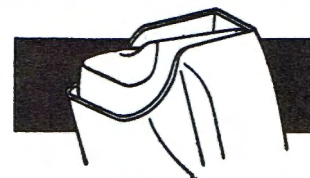
One of a series



The Browning Hi-Power pistol is one of the best military automatics yet designed. It is rugged, reliable, and has a magazine capacity of 13 rounds. It was the last pistol designed by John Browning and embodies many improvements over the .45 Model 1911 automatic. Brownings were made before and during World War II by Fabrique Nationale in Belgium. During World War II they were also manufactured in Canada for the Chinese and later for the British, Canadian, and Greek armed forces.



Browning Hi-Power magazines are the largest of the common pistol magazines. They can be easily identified by the fact that they are much wider than the normal 9 mm. magazine and also by the large detachable floorplate.



The followers of the Browning magazines are usually large white metal castings. The magazine feed lips are very strong, since they are stiffened by the long crease in either side of the magazine.—E. J. HOFFSCHMIDT

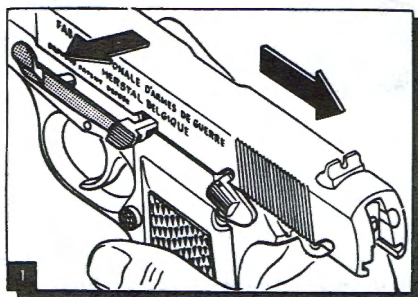


Figure 1—Remove the magazine. Pull back the slide and push the safety catch into the second notch. Push out the slide stop (T—see 'exploded' drawing) from right to left, as shown. Release the safety catch and permit the slide to go forward and off the receiver runners

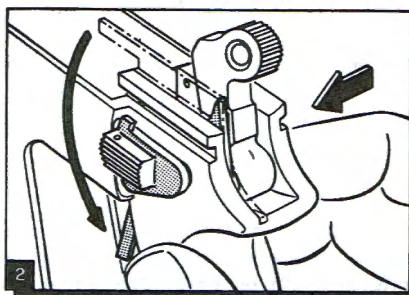


Figure 2—Push the safety catch down to fire position, then push sear pin (JJ) out from right to left. Allow the ejector (FF) to pivot down until it stops. With the ejector in this position, the safety catch (KK) can now be pushed out

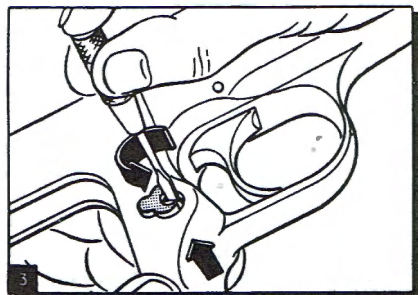


Figure 3—Hold the gun in the left hand and push in the magazine catch (I) until it is flush with frame. Using a 1/8 inch wide screwdriver, turn the magazine catch spring guide (G) 1/4 of a turn. This will lock the spring guide to the magazine catch. Then lift out the unit

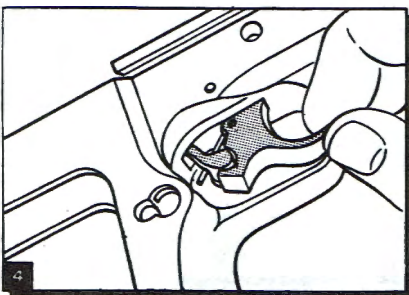


Figure 4—Push trigger pin (GG) out from right to left. Hold the gun with the right side up. With the right hand, pull the trigger forward and upward; this will remove parts (U), (HH), (II), and (OO) as a unit. These parts must be replaced as a unit when reassembling the gun

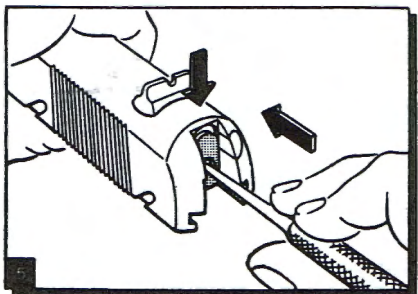


Figure 5—To remove firing pin (F) and spring (E), hold the slide in the left hand. With a 1/8 inch punch, push in the end of the firing pin; at the same time, push down on the firing pin retainer plate (DD). After firing pin and spring have been removed, pry out extractor (D)

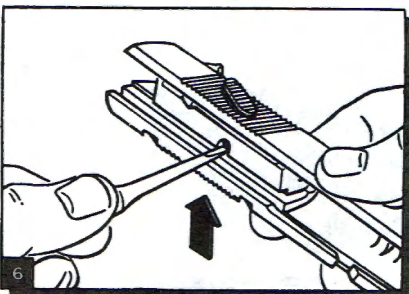
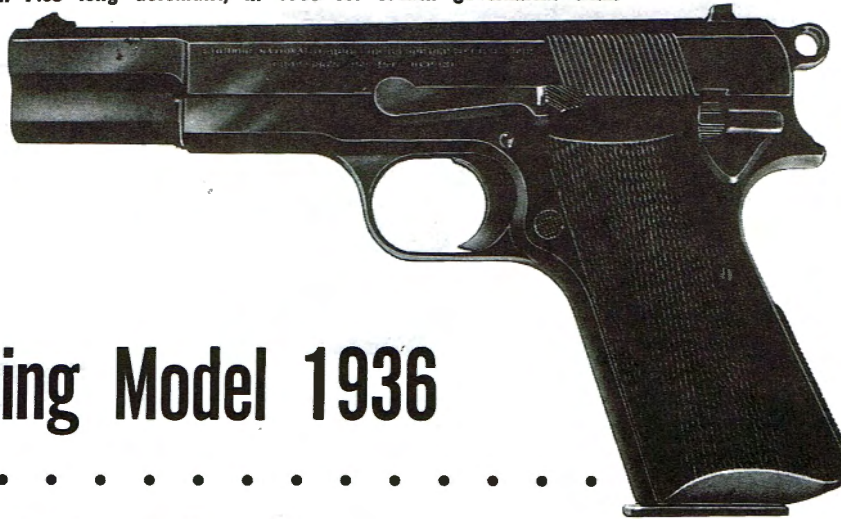


Figure 6—To remove the sear lever (CC), hold the slide upside down in the right hand. Using a small screwdriver, pry up the end of the sear lever retainer (be sure the extractor has been removed before doing this). When the head of the retainer is clear of the slide, pry it the rest of the way from the outside of the slide



The knurled plug in the base of the grip is a combination hammer spring guide and screwdriver

This Browning handgun was never manufactured. Only a few were made, in French 7.65 long automatic, in 1936 for French government trials



## The Browning Model 1936

By E. J. Hoffschmidt

THE so-called small version of the Browning HiPower Model 1935 has come to be almost a legend among automatic pistol collectors.

Story has it that the gun was manufactured for the French by Fabrique Nationale of Belgium, and that it is a small scale version of the 1935 HP. But that is where the story ended. Or at least it ended that way until an original test model, serial #7, turned up on this side of the Atlantic.

The pistol pictured here was 'liberated' from the Fabrique Nationale company museum by either German or Allied troops. Ten years later, it turned up in a Washington, D. C., gun shop where it was purchased for a nominal sum by a pistol collector.

A letter to Fabrique Nationale via their American representative, the Browning Arms Co., brought a prompt informative reply:

"This model was actually never man-

ufactured. There were a few made in 1936 for French government trials. The exact quantity is not known. It was designed for the French 7.65 long automatic cartridge (page 28 of *Center-fire Metric Revolver Cartridges* by White and Munhall) which, being considerably more powerful than the regular .32 caliber automatic pistol cartridge, required a locking system.

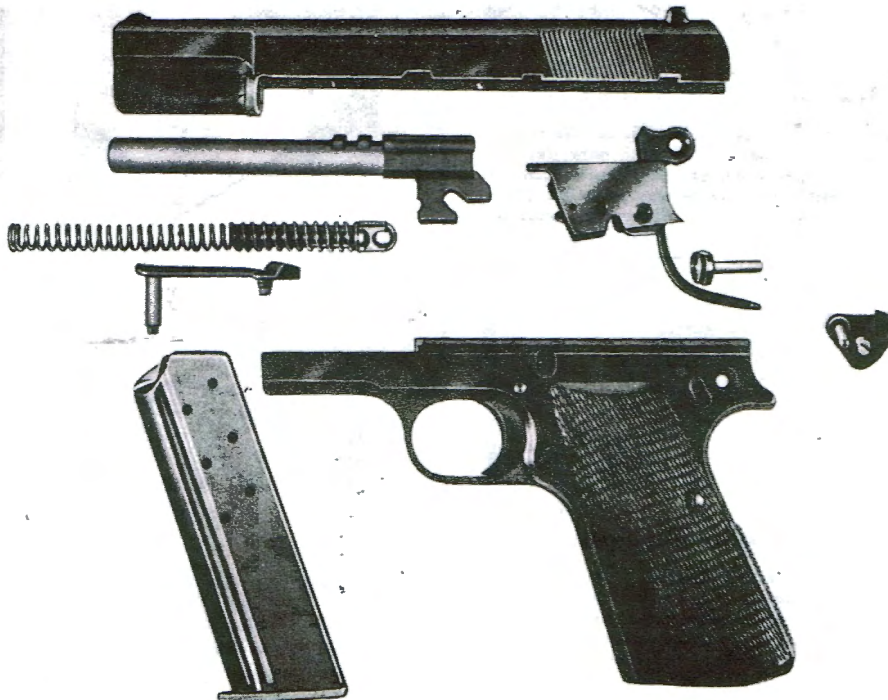
"FN presented its models at the French trials through FN's subsidiary at that time which was known as the Manufacture d'Armes de Paris and explains the marking on the right-hand side of the pistol.

"The tests were held at Versailles and Chalon; and according to FN, they clearly emerged the victor in the competition. In any case, the pistol gave good results; however, the French considered it too complicated. They then proceeded to make their own pistol at St. Etienne which in some respects was a copy of the FN model and which was never very successful as made by the French.

"The changes made on the mechanism with respect to the present 9 mm. HP model were partly made to satisfy French specifications (caliber, single row magazine, front sight, and angle of grip), and partly for simplification and economy (recoil spring guide, ejector mounting, hammer and sear) and partly as necessary adaptation to the different caliber."

While the 1936 model may look, operate, and field strip like the 1935 HP, the resemblance is only skin deep, for it has many unique and original

The hammer and sear mechanism on the Browning Model 1936 is one unit

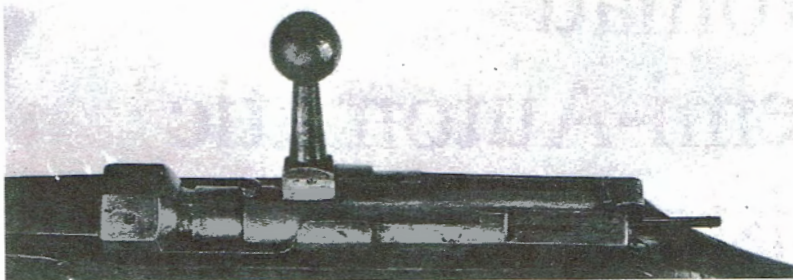




features. Probably the greatest point of difference between the 1935 HP and the 1936 is in the hammer and sear mechanism. This new mechanism is a removable assembly, similar to the Swiss Neuhausen SP47/8 or the Russian Tokarev. It is held in the frame by a large-headed pin and the safety catch. A cartridge case is the only tool necessary to remove the large-headed pin. When the pin is pried out, it frees the safety catch so that it can be removed. Then the entire sear mechanism can be lifted out of the frame. This is truly a simple, rugged and compact sear mechanism assembly. It contains the magazine disconnecter that prevents the gun from being fired when the magazine is out of the gun. It contains the firing disconnecter that prevents the gun from firing before it is fully locked or from shooting full automatic, and also contains the hammer and sear—all in one block and all in relative operating positions ready to be repaired or adjusted.

Another interesting feature is the inclusion of a small screwdriver in the butt. The large knurled plug doubles as a hammer spring guide and a screwdriver. This screwdriver is just the right size to fit the screw slot in the magazine catch. The only rub is that you must have a screwdriver to begin with to remove the walnut grips and get at the pin that retains the screwdriver.

Shooting this pistol is a distinct pleasure. The cartridge is not too powerful and the excellent grip shape gives the pistol a feel that is second to none. It weighs 28 ounces empty, is 8-1/8 inches long, and has a magazine capacity of eight rounds, so when we compare this information with the information on the 1935 HP, we see that the so-called 'small model', although thinner and lighter, is actually 3/8 of an inch longer. ♦ ♦ ♦



**Needle gun**—Rifle, pistol, revolver, or shotgun, usually of breech-loading type, with a needle-like firing pin and adapted to self-contained paper-case cartridges. Invented in 1829 by the German, Johann Nikolaus von Dreyse, a rifle version of this gun was adopted by Prussia in 1841. There was also a number of other European military rifles of needle-gun type (French Chassepot, Italian Carcano, etc.). In the Prussian needle gun shown, the firing needle penetrates the powder charge and detonates the primer in the base of the bullet. Needle guns became obsolete in the 1870's with the general adoption of successful metallic cartridges.

**Bullet cannelures**—Grooves encircling a bullet. One type of cannelure, especially on lead bullets, is for holding lubricant. Other types are a crimping cannelure into which the cartridge case is crimped, a locking cannelure for locking the bullet jacket to the core and helping control expansion, an expansion cannelure to facilitate expansion of an open-point jacketed bullet, and an identification cannelure which identifies the weight of the bullet. The lead bullet illustrated has a crimping cannelure (arrow) and 2 lubricant cannelures.



**Rolling-block action**—Single-shot action with breechblock and hammer pivoted to the receiver. The parts are arranged so the hammer, as it pivots toward the front, locks the breechblock. There are several variants of this action, but the best known is that patented in the U. S. by Leonard M. Geiger in 1863, and improved by Joseph Rider, a Remington employee. The Remington rolling-block action, also called the Remington-Rider action, was popular for many years, and was used in Remington single-shot rifles, shotguns, and pistols. Military rifles with this action were adopted by foreign nations, and copies of this action were produced in Sweden, Denmark, and Spain.

**High-pressure test cartridge (proof load)**—Cartridge which gives higher than normal pressure, and used for proof firing of small arms. It is specially marked or has other means of identification such as a tinned case or a different bullet. An example is the cal. .30 U. S. Carbine high-pressure test cartridge illustrated, which has a longer and differently-shaped bullet than that of the ball cartridge. High-pressure test cartridges are properly used only when the gun is covered by a protective hood and fired remotely. A common nickname for this type of cartridge is 'blue-pill'.

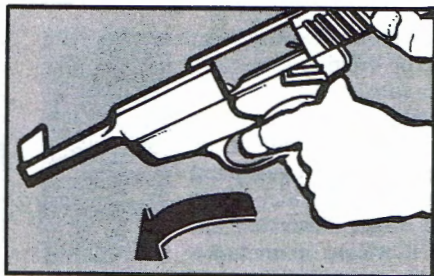




# Browning Nomad Semi-Automatic Pistol



By THOMAS E. WESSEL



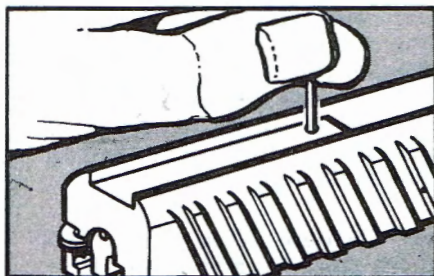
**1** Remove magazine (37) and coin-slotted barrel mounting screw (16) located under barrel (1) on front of frame (18). Pull slide (9) rearward and tap muzzle on a padded surface, while retaining slide in rearward position. Push barrel rearward and slightly upward to separate it from frame. Allow slide to move slowly forward and off front of frame, being careful not to lose control of recoil spring (26)

**T**HE Belgian-made Browning Nomad semi-automatic pistol chambered for the .22 long rifle cartridge (standard or high velocity) was introduced in 1962. It is blowback operated and the concealed hammer is of pivoted type.

The frame is lightweight alloy; other parts are steel. The black plastic grip is of one-piece construction and side panels are sharply checkered. The detachable magazine holds 10 rounds. The rear sight is fully adjustable.

The barrel is secured to the frame by a single screw and unique wedge lock arrangement. The standard barrel length is 4½", but 6¾" barrel is also available. This pistol does not have an automatic slide stop or magazine disconnect.

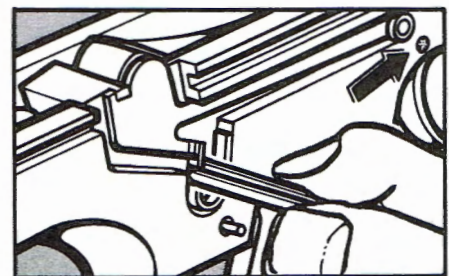
The Browning Nomad is essentially a sports pistol for the camper, or for informal target shooting. It weighs 26 ozs. with 4½" barrel; length over-all is 8⅞".



**2** Remove firing pin (14) by inserting a small drift into hole on top of slide and drifting out firing pin retaining pin (15). Firing pin and firing pin spring (13) may be removed from rear of slide. Perform this disassembly only when necessary. When replacing firing pin retaining pin, it is necessary to peen over the rim of the pin hole to keep the pin in place

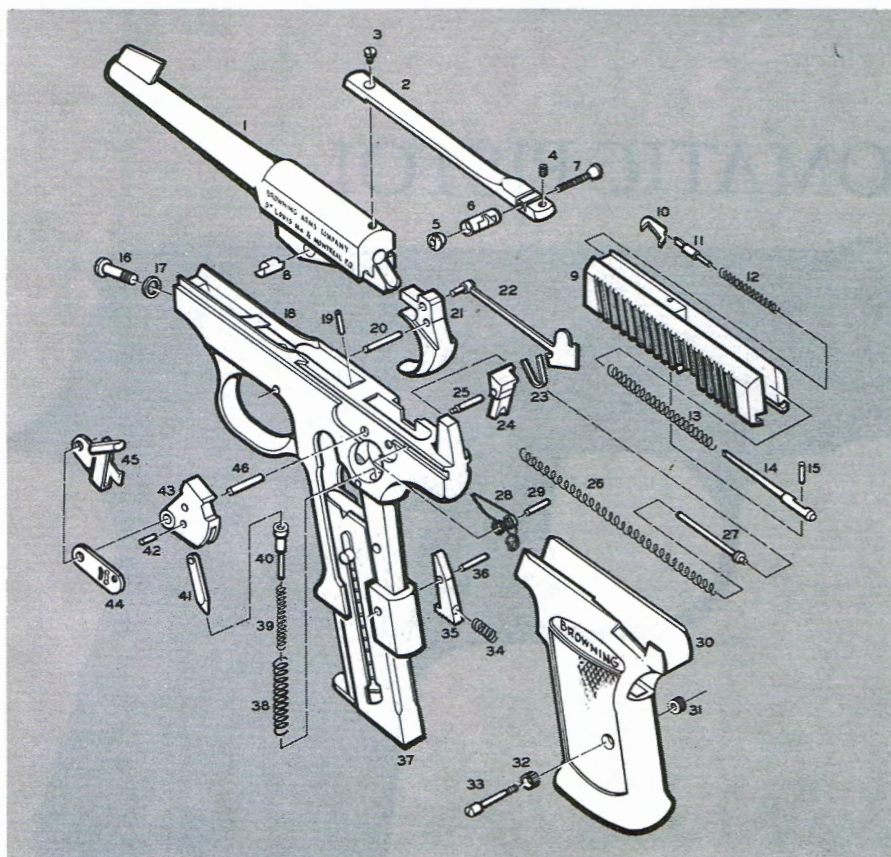


**3** Remove grip screw (33) and grip (30). Depress hammer (43) with thumb until upper collar on mainspring plunger (40) is no longer visible through access hole in side of frame. Insert a long, ⅛" diameter steel brad in this hole to retain mainsprings (38 and 39) fully compressed. Hammer will now move loosely



**4** Using tweezers, pluck out disconnect spring (23) from right side of frame and lift away disconnect (22). Drift out trigger pin (20, arrow) and remove trigger (21)

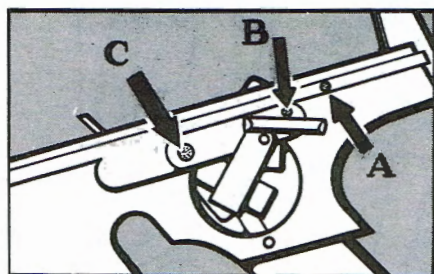




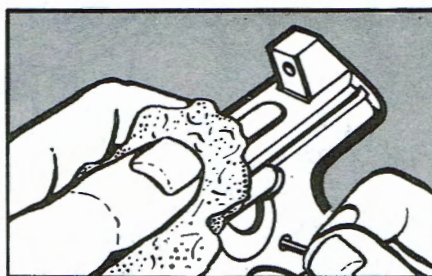
## Parts Legend

- |  |                                  |                           |
|--|----------------------------------|---------------------------|
| 1. Barrel                                  | 15. Firing pin retaining pin     | 32. Grip screw washer *   |
| 2. Rear sight base *                       | 16. Barrel mounting screw        | 33. Grip screw            |
| 3. Rear sight base mounting screw *        | 17. Barrel mounting screw washer | 34. Magazine latch spring |
| 4. Rear sight adjusting screw, elevation   | 18. Frame                        | 35. Magazine latch        |
| 5. Rear sight adjusting screw nut, windage | 19. Ejector *                    | 36. Magazine latch pin    |
| 6. Rear sight                              | 20. Trigger pin                  | 37. Magazine              |
| 7. Rear sight adjusting screw, windage     | 21. Trigger                      | 38. Outer mainspring      |
| 8. Barrel guide pin                        | 22. Disconnecter                 | 39. Inner mainspring      |
| 9. Slide                                   | 23. Disconnecter spring          | 40. Mainspring plunger    |
| 10. Extractor                              | 24. Sear                         | 41. Hammer link strut     |
| 11. Extractor plunger                      | 25. Sear pin                     | 42. Hammer link pin       |
| 12. Extractor spring                       | 26. Recoil spring                | 43. Hammer                |
| 13. Firing pin spring                      | 27. Recoil spring guide          | 44. Click plate           |
| 14. Firing pin                             | 28. Sear spring                  | 45. Safety                |
|  | 29. Sear spring pin              | 46. Hammer pin            |
|  | 30. Grip                         |                           |
|  | 31. Grip screw nut *             |                           |

\* Permanent factory sub-assembly to other major part.



5 Continue by drifting out (A) sear spring pin (29) and remove sear spring (28). Tweezers will aid in lifting spring from slot in top of frame. Drift out (B) sear pin (25) from left to right and remove sear (24). Drift out (C) hammer pin (46) and remove hammer with attached link strut (41). The safety (45) and click plate (44) may now be removed.



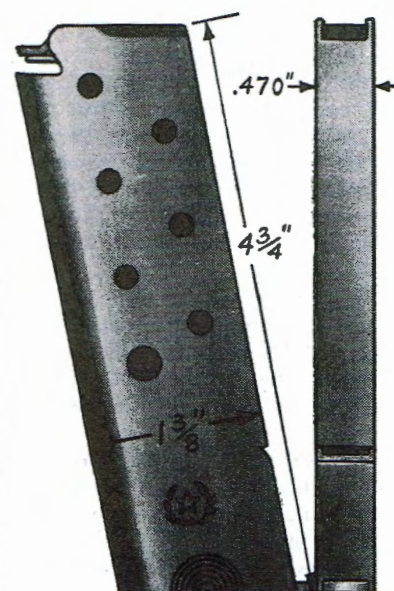
6 Should it be necessary to remove mainsprings, grasp the frame using clean cotton waste to pad hand, placing thumb over slot in top of frame and over that area where springs will emerge. Withdraw steel brad inserted earlier. Springs and plunger will jump upward into padding. Reassemble arm in reverse.



Campo Giro  
Model 1913-16  
Pistol

## PISTOL MAGAZINES

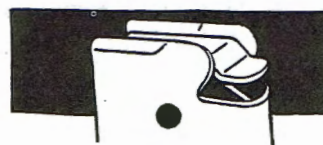
One of a series



Before World War II, Campo Giro pistols were relatively scarce here, but after World War II a number of these interesting Spanish pistols were imported. Though awkward in design, they are generally well made and finished. Since they fired the powerful 9 mm. Campo Giro (9 mm. Bergmann-Bayard) cartridge from an unlocked breech, a unique slide buffer was incorporated to prevent battering of the frame and of the barrel.



Campo Giro magazines are relatively easy to recognize. The floorplate extends to the rear of the magazine instead of to the front. The circular finger grip cuts, and the star inside the wreath are additional points of recognition.



The magazine lips look like those of most other magazines, but the follower has a bent step which operates the slide hold-open catch when the gun is empty. This is characteristic of the Campo Giro magazine.—EDWARD J. HOFFSCHMIDT



# COLT .25 AUTOMATIC PISTOL

Illustrations by DENNIS RIORDAN.  
Text by LUDWIG OLSON

Colt's of Hartford, Conn., is among the world's leading suppliers of .25 ACP pocket automatic pistols. Their first pistol of this type was developed by John M. Browning, the famous U.S. arms designer, and introduced in 1908. Approximately 500,000 of this excellent blowback-operated arm were produced.

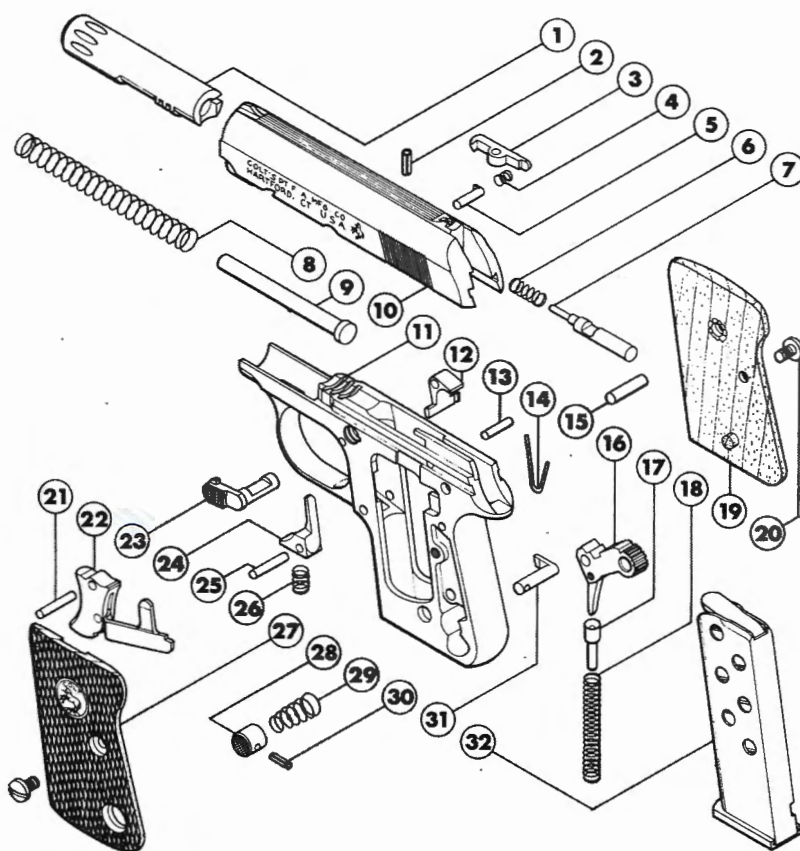
This pistol was discontinued in 1946, and Colt's did not re-enter the .25 ACP pocket pistol field until 1958 when they introduced the Junior Colt. This was produced for Colt's by Unceta & Co. in Spain.

The 1968 Gun Control Act stopped importation of the Junior Colt, and this Spanish-made pistol was replaced by a .25 ACP pocket automatic introduced in 1970. Called the Colt Automatic Caliber .25, the new blowback-operated pistol was produced by another U.S. firm. It weighs only 12½ ozs., measures 4-7/16" in overall length, and has a six-round detachable magazine. Its low compact sights are integral with the slide. Also integral with the slide is a serrated rib which extends between the sights.

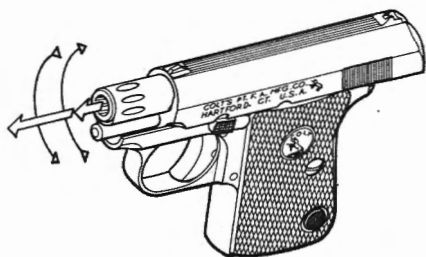
A mechanical thumb safety on the left side of the frame also serves as a slide hold-open device. Other safety features are an exposed hammer with rounded spur and a magazine safety which prevents firing when the magazine is removed. The exposed hammer makes it possible to tell at a glance whether or not the pistol is cocked.

Although the hammer has a half-cock notch, a moderate pull on the trigger when the safety is disengaged will cause the hammer to drop. The firing pin is independent, but not of rebounding type. With the hammer fully down, it contacts the firing pin which then extends beyond the breech face. It is therefore unsafe to carry the pistol with the chamber loaded and the hammer resting on the firing pin.

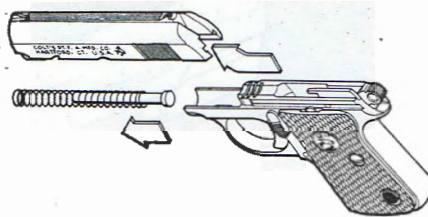
The pistol is attractive. Most metal parts have a highly-polished blue finish which contrasts pleasingly with the checkered walnut grips. Inlaid in each grip is a circular plated medallion bearing the Colt trademark.



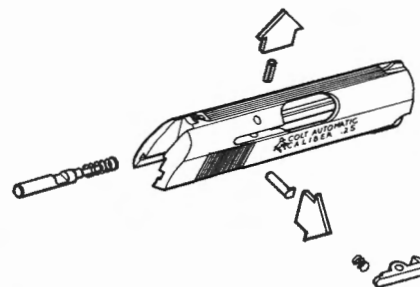




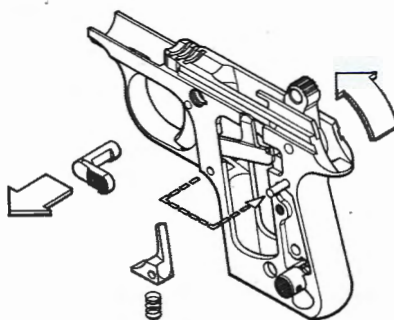
**1** Begin takedown by moving safety (23) upward to safe position. Depress magazine-catch button (28) and remove magazine (32). Draw slide (10) fully rearward to clear chamber. Safety will engage slide, locking it open. Rotate barrel (1)  $\frac{3}{4}$  turn clockwise and pull forward as far as it will go. Then rotate it  $\frac{3}{4}$  turn counterclockwise and remove from slide.



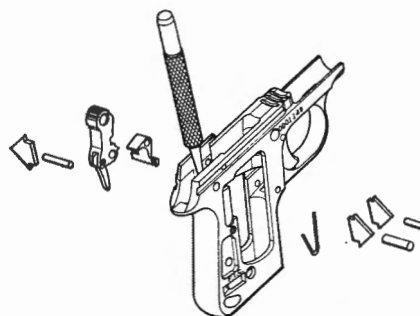
**2** Grasp slide firmly and move safety downward to fire position. Ease slide forward off frame (11). Remove recoil spring (8) and guide (9) from frame tunnel. This is sufficient disassembly for normal cleaning.



**3** To disassemble further, drive out extractor pin (2) with a pin punch that closely fits hole in slide. Extractor (3) and its spring (4) may then be lifted out. Pry out firing-pin retaining pin (5) with a narrow screwdriver blade inserted under its elongated head. Removal of the pin releases firing pin (7) and spring (6).



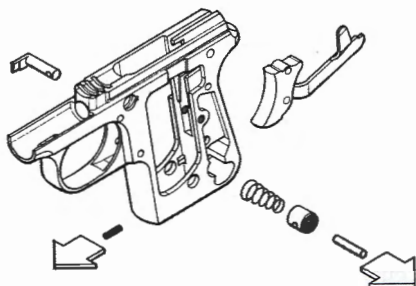
**4** Unscrew grip screws (20) and remove grips (19) (27). Rotate safety  $\frac{1}{2}$  turn from safe position and withdraw from frame. Drift out magazine-safety pin (25) and remove magazine safety (24) and spring (26). Insert magazine-safety pin in frame hole below disconnector (22). Pull trigger and lower hammer with thumb, until hammer-spring guide (17) stops against the pin.



**5** Unhook forward arm of sear spring (14) from sear (12), and remove spring. Drift out hammer pin (15) and lift hammer assembly (16) from frame. Drift out sear pin (13) and remove sear. Depress hammer-spring guide with punch, and withdraw magazine-safety pin. Then, ease out hammer spring (18) and guide.

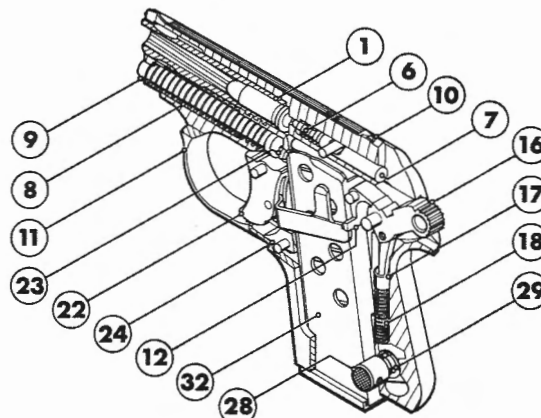
#### Parts Legend

1. Barrel
2. Extractor pin
3. Extractor
4. Extractor spring
5. Firing-pin retaining pin
6. Firing-pin spring
7. Firing pin
8. Recoil spring
9. Recoil-spring guide
10. Slide
11. Frame
12. Sear
13. Sear pin
14. Sear spring
15. Hammer pin
16. Hammer w/strut & pin
17. Hammer-spring guide
18. Hammer spring
19. Grip plate, right
20. Grip screw (2)
21. Trigger pin
22. Trigger w/disconnector
23. Thumb safety
24. Magazine safety
25. Magazine-safety pin
26. Magazine-safety spring
27. Grip plate, left
28. Magazine-catch button
29. Magazine-catch spring
30. Magazine-catch pin
31. Magazine catch
32. Magazine



**6** Drift out magazine-catch pin (30) to free magazine catch (31), spring (29), and button. Drift out trigger pin (21), releasing the trigger assembly. Reassemble in reverse. Trigger must be rotated forward to fully compress its internally located spring when the trigger pin is replaced.

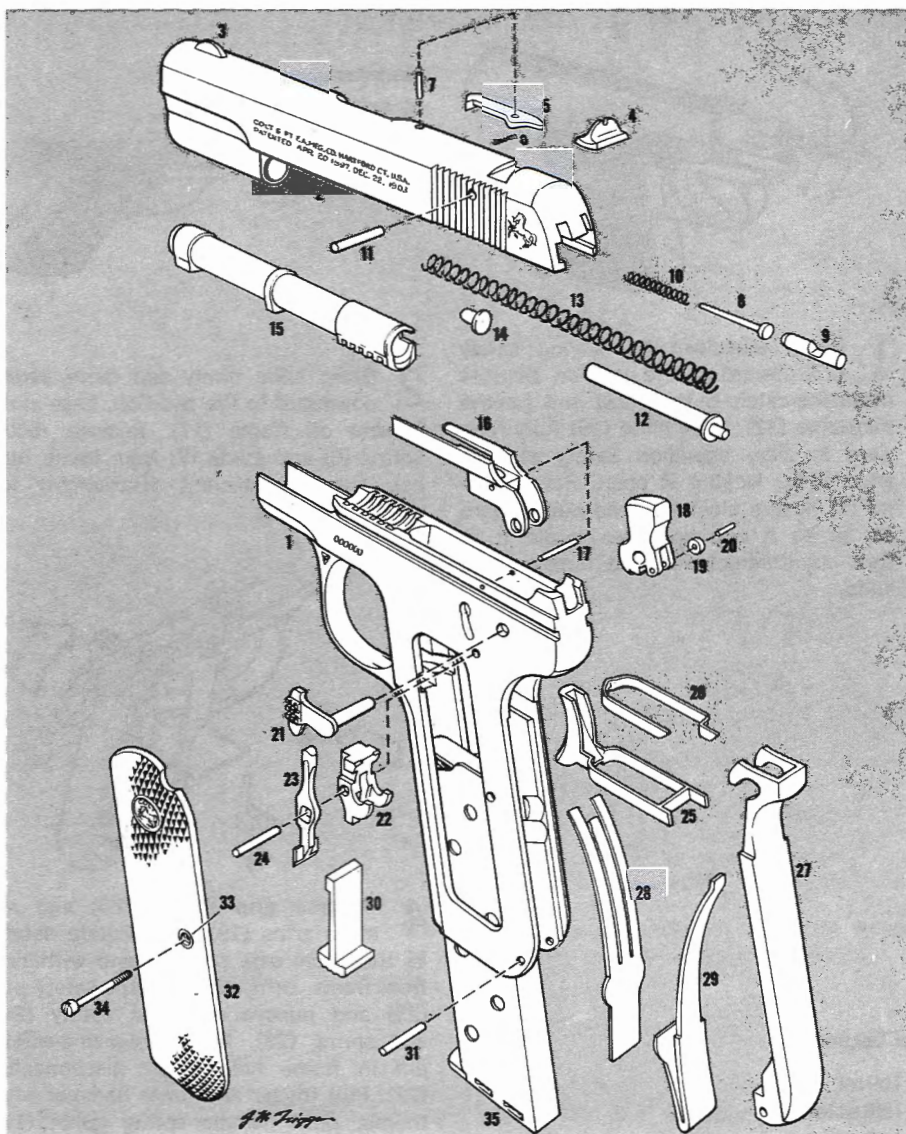
**7** Cutaway shows relative positions of internal parts. Pistol is pictured with magazine and manual safeties released and hammer at full cock. Parts are number keyed to parts legend.





## LEGEND

1. Receiver
2. Slide
3. Front sight
4. Rear sight
5. Extractor
6. Extractor spring
7. Extractor pin
8. Front firing pin
9. Rear firing pin
10. Firing pin spring
11. Firing pin lock pin
12. Recoil spring guide
13. Recoil spring
14. Plug
15. Barrel
16. Ejector
17. Ejector pin
18. Hammer
19. Hammer roll
20. Hammer roll pin
21. Slide lock safety
22. Sear
23. Disconnecter
24. Sear pin
25. Trigger
26. Depressor
27. Grip safety
28. Sear spring
29. Mainspring
30. Magazine catch
31. Grip safety pin
32. Grips (2)
33. Escutcheons (2)
34. Grip screw
35. Magazine



# Colt Automatic .32 and .380 Pocket Pistol

By James M. Triggs

INTRODUCED around the turn of the century, the Browning-designed .32 pocket automatic pistol was the first hammerless or concealed-hammer pistol produced by the Colt firm. Early models show the single patent date of April 20, 1897; later models bear the additional December 22, 1903, patent date.

A salient design feature of this excellent pistol is the slide lock safety mechanism which, in addition to its primary function of holding the slide to the rear, also serves as a mechanical safety to block the hammer and as a means of determining whether the hammer is cocked. If the hammer is cocked, the

slide lock safety can be pushed upward to engage a corresponding cut in the slide. When the hammer is down in fired position, the slide lock safety cannot be pushed upward to engage the slide cut.

The grip safety, which automatically blocks the sear to prevent discharge of the gun unless pressure is simultaneously applied to both trigger and grip safety, is another important and widely copied design feature. It also serves as a cocking indicator by projecting from the rear of the grip only when the hammer is cocked. Later models with serial numbers above 468,097 incorporate a magazine disconnecter device to prevent the gun firing with the magazine removed.

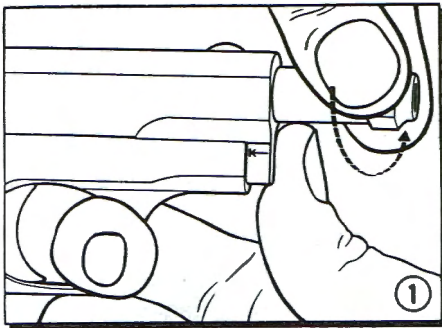
James E. Serven in his fine book, *Colt Firearms 1860-1954*, records that

pistols with serial numbers 1 to 72,000 had four-inch barrels requiring a separate bushing. Pistols 72,001 to 95,800 had 3¾-inch barrels and a small extractor. Pistols 95,801 to 105,050 had 3¾-inch barrels with a larger extractor. Final production from gun number 105,050 to 572,215 had 3¾-inch barrels with integral bushing and a locking lug at the muzzle end of the barrel. There was a change in the slide lock safety at gun number 416,896.

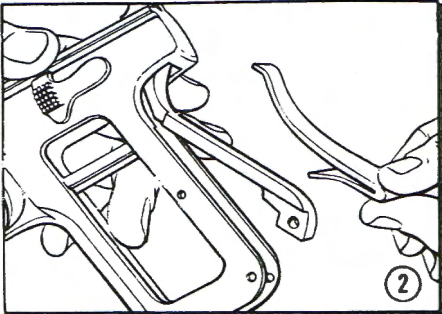
Initially offered in .32 caliber only, the pistol was announced in the additional .380 ACP chambering in 1908. It is possible to convert either model to either caliber by substitution of magazines and barrels. Colt discontinued production of this pistol in both calibers in 1946.

JAMES M. TRIGGS, a writer-illustrator of Mamaroneck, N. Y., has been a gun collector for 15 years.

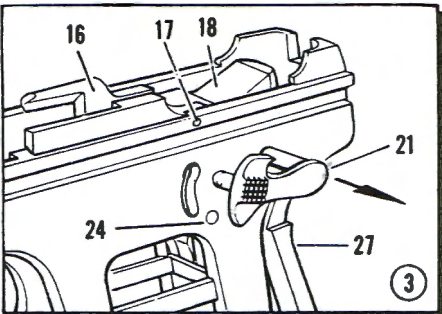




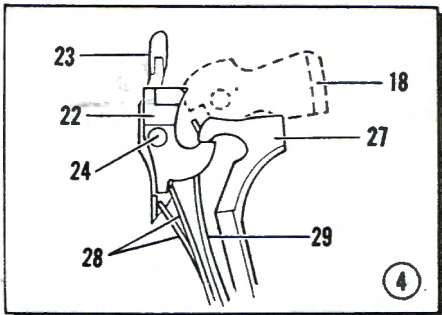
1. Remove magazine and check chamber to insure that it is unloaded. Cock the pistol. Grasp the pistol as shown, lining up the mark and arrow stamped on right side of slide with forward edge of receiver. With fingers of left hand twist barrel to left until its locking lugs disengage from receiver. Withdraw slide, barrel, recoil spring, and guide from receiver. Turn barrel and withdraw it from slide



2. Remove stocks and drive out grip safety pin (31). Pull out lower end of grip safety (27) and withdraw the mainspring (29), sear spring (28), and magazine catch (30)

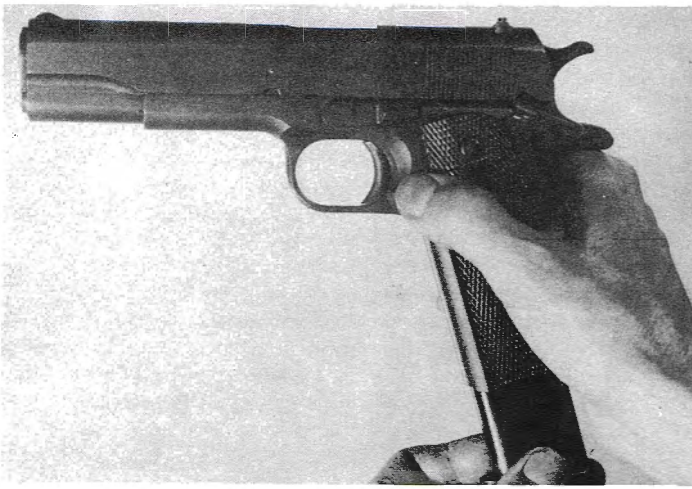


3. Put slide lock safety (21) in "safe" or up position and withdraw it from receiver as shown. Hammer (18), ejector (16), and grip safety (27) can now be removed. Sear (22) and disconnector (23) can be removed by driving out their retaining pin (24)



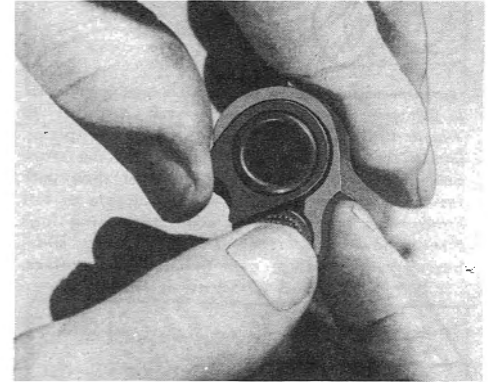
4. Parts may be reassembled in reverse order. Sear and disconnector are assembled in relationship as shown. Insert sear spring so that its leaves engage sear and disconnector. Insert mainspring so smaller leaf faces in toward the magazine well. Hammer must be in forward position to insert mainspring





**1** Press magazine catch with right thumb and, at same time, withdraw magazine from receiver. Pull slide to rear and look in chamber to see that gun is not loaded. Close slide and pull trigger so hammer is down

**2** With thumb, press inward on knurled end of plug, at same time rotating barrel bushing ¼-turn clockwise to free plug and recoil spring assembly. Rest heel of gun on table so both hands may be used



## IT'S VERY EASY . . . .

**Takedown of the .45 auto pistol may look difficult, but if you do the job step-by-step you will have no trouble**

**T**HE fact that the basic U. S. Pistol, Caliber .45, Model of 1911, is still the official handgun of our Service, speaks well for both the Colt firm and the board of U.S. Army officers involved in its selection. Composed of four line officers and one Ordnance officer, this selection board was convened by a Special Order of the Secretary of War dated December 28, 1906. Weapons referred to the board were all of .45 caliber and included autoloading pistols of Colt, Luger, Savage, Knoble, Bergmann, and White-Merrill design, and double-action revolvers by Colt and Smith & Wesson. Also considered was the unique automatic revolver of Webley-Fosbery make.

The evaluation program instituted by the board was designed to simulate rigorous service conditions as much as possible and included endurance, dust, rust, accuracy, functioning, and numerous other tests calculated to reveal design flaws and general service capabilities of the various guns submitted.

### Service test revealing

By 1907 the board had completed its work and all but the Colt and Savage entries had been eliminated from consideration. A service test of both the Colt and Savage pistols was then authorized with two troops of

U.S. Cavalry assigned for this purpose. This initial service test revealed that neither pistol had reached the desired perfection. Accordingly, the Ordnance Department instituted a series of further experiments and informal tests which eventually resulted in the appointment of a new selection board which convened in March of 1911.

### Its superiority noted

The first paragraph of their final report is as follows:

"Of the two pistols, the board was of the opinion that the Colt is superior, because it is more reliable, more enduring, more easily disassembled when there are broken parts to be replaced, and the more accurate."

That, in short, explains why the Browning-Colt .45 Automatic pistol was eventually adopted as an official U.S. Service arm and formally designated as the U.S. Pistol, Caliber .45, Model of 1911. It is recorded that Colt made up nearly 200 experimental pistols before producing the model finally accepted.

Serviceably accurate, readily disassembled without the use of tools, and extremely rugged in every detail, the Model of 1911 has achieved a reputation for combat serviceability unsurpassed by any other military handgun.

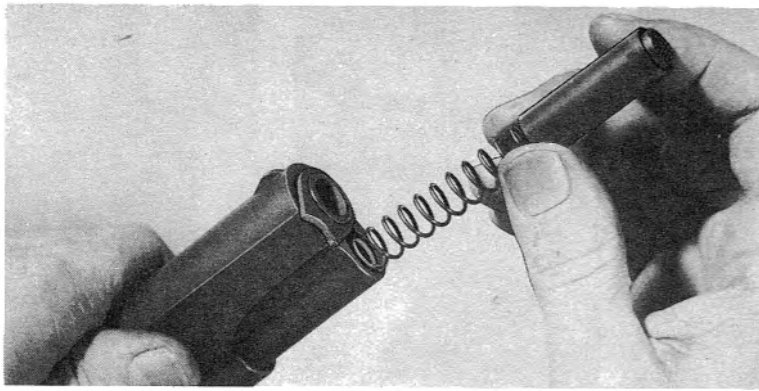
It is admittedly a difficult weapon to shoot accurately and during the early 1920's several minor changes were made in an attempt to better its handling qualities. These changes included an arched mainspring housing, shorter hammer spur, Patridge-type sights, short trigger, and longer grip safety horn. These changes eliminated 'pinching' of the thumb web, and men with short fingers or small hands welcomed the shorter trigger. The better sights also improved the sight picture for target shooting purposes. This improved model was designated as the Model 1911-A1.

### Not always wanted

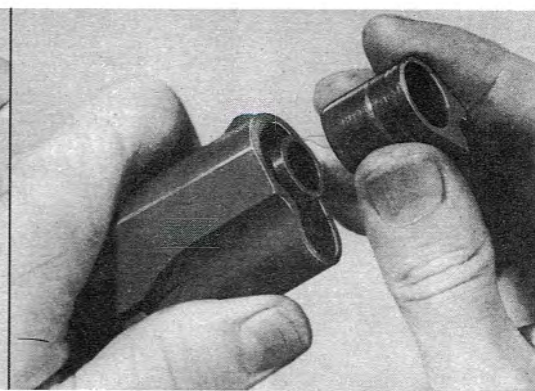
Surprisingly enough, many present-day shooters prefer the original long trigger and old-style flat mainspring housing and will invariably 'demodernize' a new gun by substituting old-style parts for the new!

Target shooting with the 'as issued' Service pistol can be disappointing if the various moving parts are not precisely fitted and adjusted. In race-track terminology, the .45 Colt pistol is a 'mudder' designed to function reliably with a good deal of foreign matter in its mechanism. The necessarily wide clearances between moving parts are desirable in a military but un-





**3** Remove plug and recoil spring. If spring does not come free easily, rotate plug in counter-clockwise direction to separate plug from recoil spring



**4** Rotate barrel bushing counter-clockwise until disengaged from slide. Remove barrel bushing

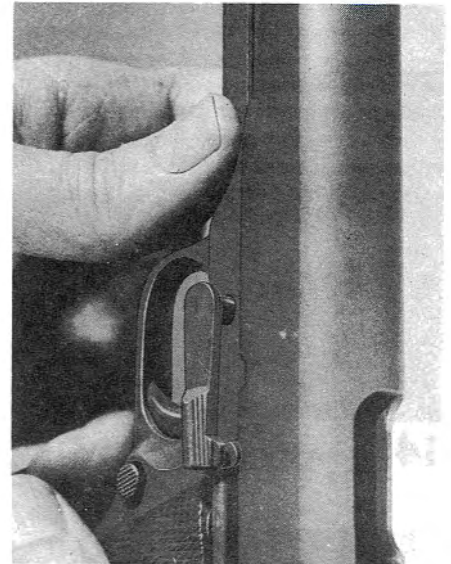
desirable in a target weapon. Thus, Colt in 1933 introduced their National Match .45, which is the same basic pistol machined to closer tolerances, with specially selected barrel and optional adjustable rear sight, and precision-fitted lock work. It enjoyed considerable popularity, but was discontinued during World War II. It was reinstated in the Colt handgun line in 1957 as the Colt Gold Cup National Match model.

#### Good scores attainable

Most U. S. marksmen now have their commercial or military .45's 'accurized' by one of the several experienced pistol-smiths specializing in this type of work. Scores obtainable today with such pistols would have been considered fantastic 20 years ago.

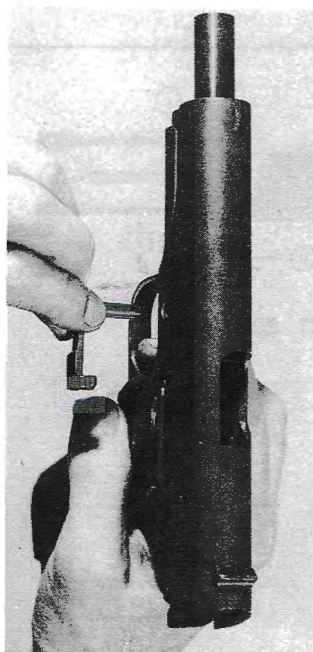
A modern variation of this basic

Browning-Colt pistol is the Colt Commander, featuring frame and slide of lightweight Colt alloy. With a  $\frac{3}{4}$ -inch shorter barrel and weighing  $26\frac{1}{2}$  ounces as compared with 39 ounces for the Model 1911, this model was particularly designed for those who prefer lightweight but powerful handguns. Although not at this time an official Service arm, its development by Colt engineers was undoubtedly sparked by the present Service trend towards lightweight and miniature equipment. The demands of modern warfare have stimulated this type of development engineering, and we can be thankful that civilian manufacturers are often independently engaged in such costly research projects. Their unselfish efforts have helped to give the U.S. Serviceman some of the finest combat weapons available in the world today.

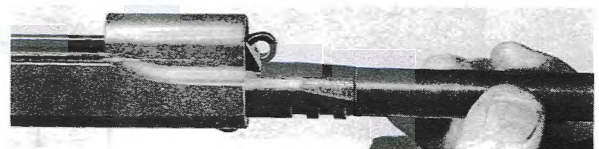
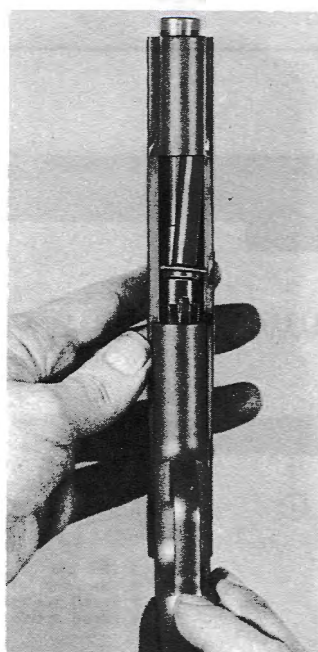


**5** Slide is pulled to rear until lug on slide stop is opposite clearance notch on slide. Rounded end of slide stop pin protruding on right side of receiver is pushed inward by finger of left hand, which disengages slide stop from slide

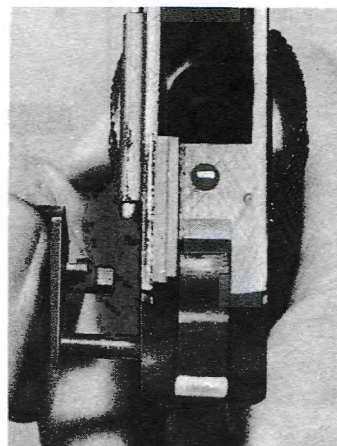
**6** Remove slide stop



**7** Pull receiver group to rear and off slide. Recoil spring guide can now be lifted out



**8** Push link forward and remove barrel from front of slide



**9** With hammer cocked, rotate safety lock almost to "On" position. It can now be pulled to left and away from receiver





**10** Remove hammer pin



**11** Lift out hammer assembly



**12** Using hammer strut, punch out mainspring housing pin



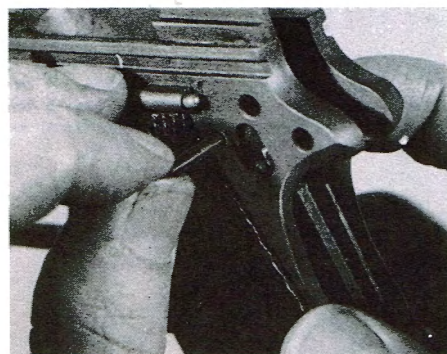
**13** Slide mainspring housing off receiver



**14** Lift out grip safety



**15** Lift out sear spring



**16** Remove sear pin

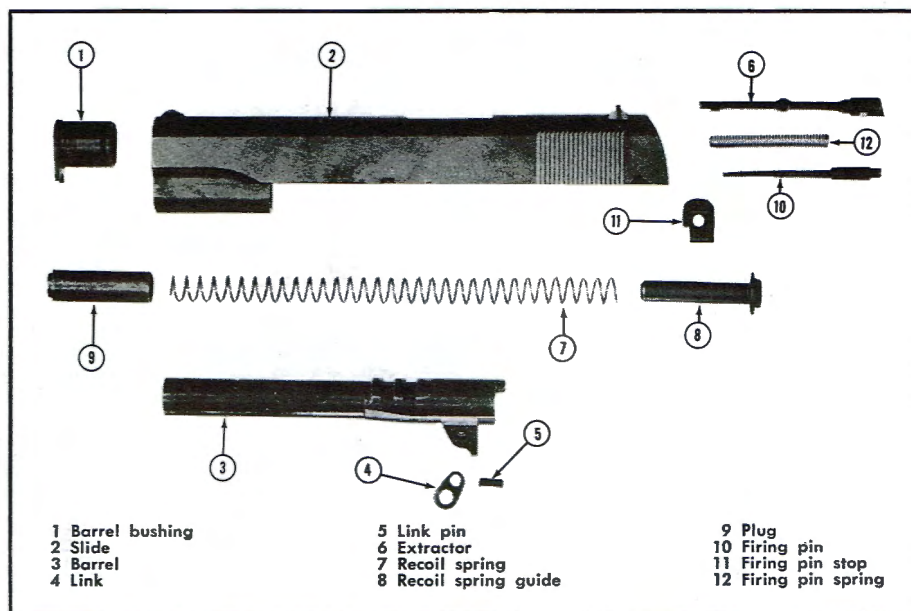
#### DIRECTIONS FOR ASSEMBLY

**To assemble slide:** Insert extractor into slide with its flat side parallel to recess wall and push inward until notch near rear of extractor is opposite notch in right side of recess wall.

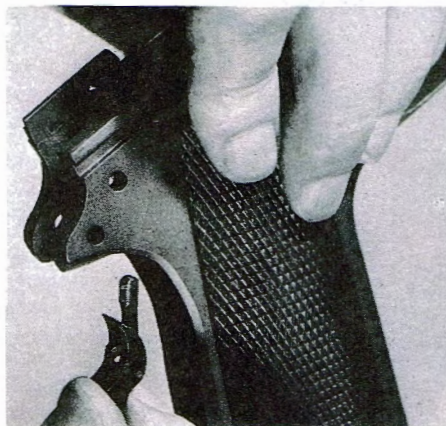
¶ Place firing pin spring on firing pin and insert assembly into firing pin hole in slide. Depress firing pin with fingertip and at same time insert firing pin stop with its rounded edge up and notch to left. Push upward on firing pin stop until it engages shoulder at rear of firing pin, thus holding firing pin in place within slide. Using hammer strut, depress firing pin to permit movement of firing pin stop upward into final position. End of firing pin should now protrude through hole in firing pin stop. ¶ Assemble link to barrel with link pin. ¶ Insert barrel assembly into slide and engage barrel locking lugs with recesses in slide. ¶ Insert barrel bushing into slide. ¶ Insert recoil spring guide into recoil spring and place assembly in slide with wings on recoil guide toward barrel.

**To assemble receiver:** Insert trigger. ¶ Insert magazine catch. ¶ Assemble sear and disconnector together with flat face of disconnector against trigger yoke and sear over disconnector, curved section inwards, lugs pointing to bottom. ¶ Insert sear pin from left side of receiver. ¶ Replace sear spring and retain in place with mainspring housing inserted  $\frac{1}{8}$ " short of final position. ¶ Replace hammer and strut assembly. ¶ Insert hammer pin. ¶ Replace grip safety. ¶ Cock hammer and replace safety lock. ¶ Lower hammer and with end of hammer strut in mainspring cap press mainspring housing into place and insert mainspring housing pin.

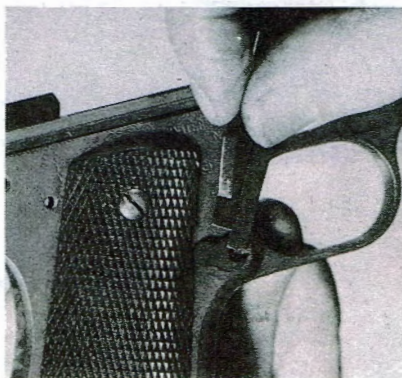
**To complete assembly of pistol:** Cock hammer. While holding both slide and receiver bottom side up and with link tilted forward, slide receiver into the slide assembly and insert slide stop, taking care that slide stop pin engages link. Push forward and inward to engage slide stop. ¶ Engage safety to lock receiver and slide together. ¶ Place plug over end of recoil spring. Push plug into slide until barrel bushing can be rotated into locked position. ¶ Disengage safety. ¶ Insert magazine.







**17** Lift out sear and disconnector. Note relationship of these parts to facilitate reassembly



**18** Depress magazine catch from left side; at same time rotate magazine catch lock ¼-turn counter-clockwise using lip of sear spring as screwdriver. Magazine catch assembly is then removed from right side of receiver. Catch assembly can be reduced to components by turning lock clockwise ¼-turn. Spring and lock will come out



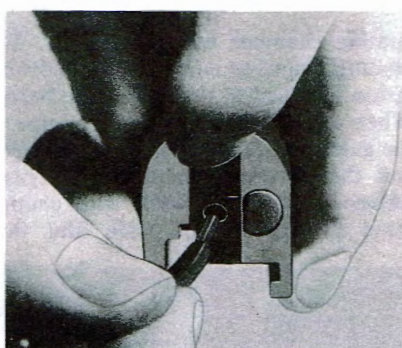
**19** Remove trigger



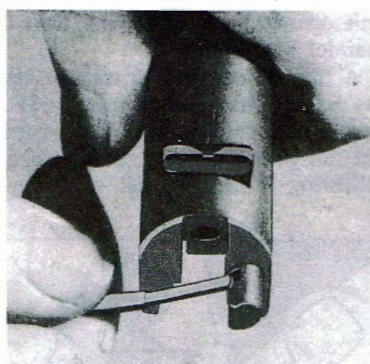
**20** With hammer strut, push out link pin, separating link from barrel



**22** Remove firing pin stop. Firing pin assembly can now be removed from slide



**21** With hammer strut, push in on firing pin. At same time place fingernail against top edge of firing pin stop and push downward, freeing firing pin stop from recess in slide

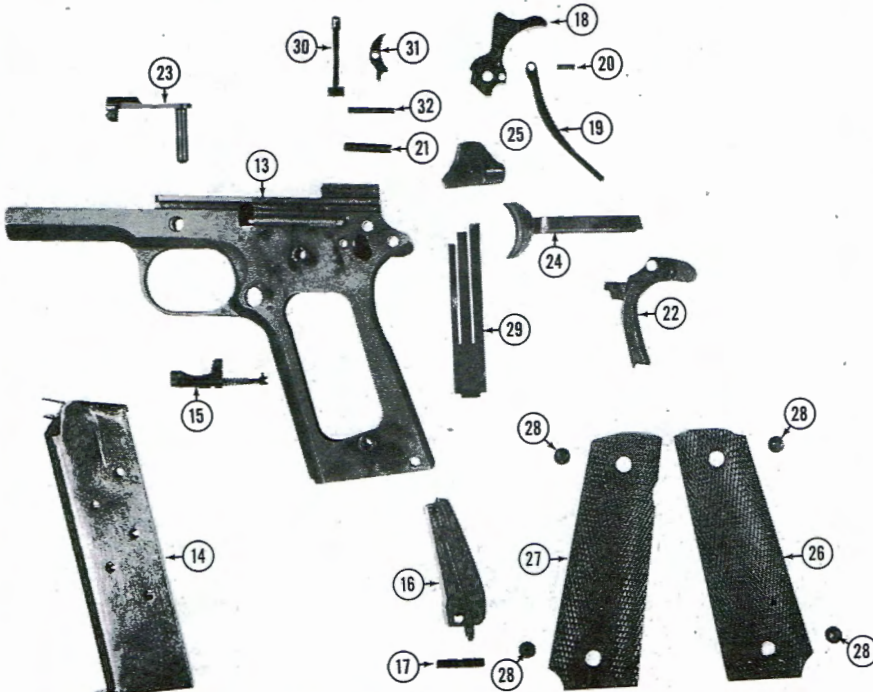


**23** With hammer strut, pry out and remove extractor

**24** Separate firing pin from firing pin spring



- |                            |                     |                  |                       |
|----------------------------|---------------------|------------------|-----------------------|
| 13 Receiver                | 18 Hammer           | 23 Slide stop    | 28 Stock screw (four) |
| 14 Magazine                | 19 Hammer strut     | 24 Trigger       | 29 Sear spring        |
| 15 Magazine catch          | 20 Hammer strut pin | 25 Safety lock   | 30 Disconnecter       |
| 16 Main spring housing     | 21 Hammer pin       | 26 Stock (left)  | 31 Sear               |
| 17 Main spring housing pin | 22 Grip safety      | 27 Stock (right) | 32 Sear pin           |







# Colt .22-.45 Conversion Unit

By EDWARD J. HOFFSCHMIDT

**I**N 1938 the Colt firm introduced their cal. .22 long rifle conversion unit for the M1911 cal. .45 ACP pistol.

While the method of converting a cal. .45 pistol to cal. .22 was not revolutionary, the method of attaining a recoil effect similar to that developed by the .45 ACP cartridge was. The Williams

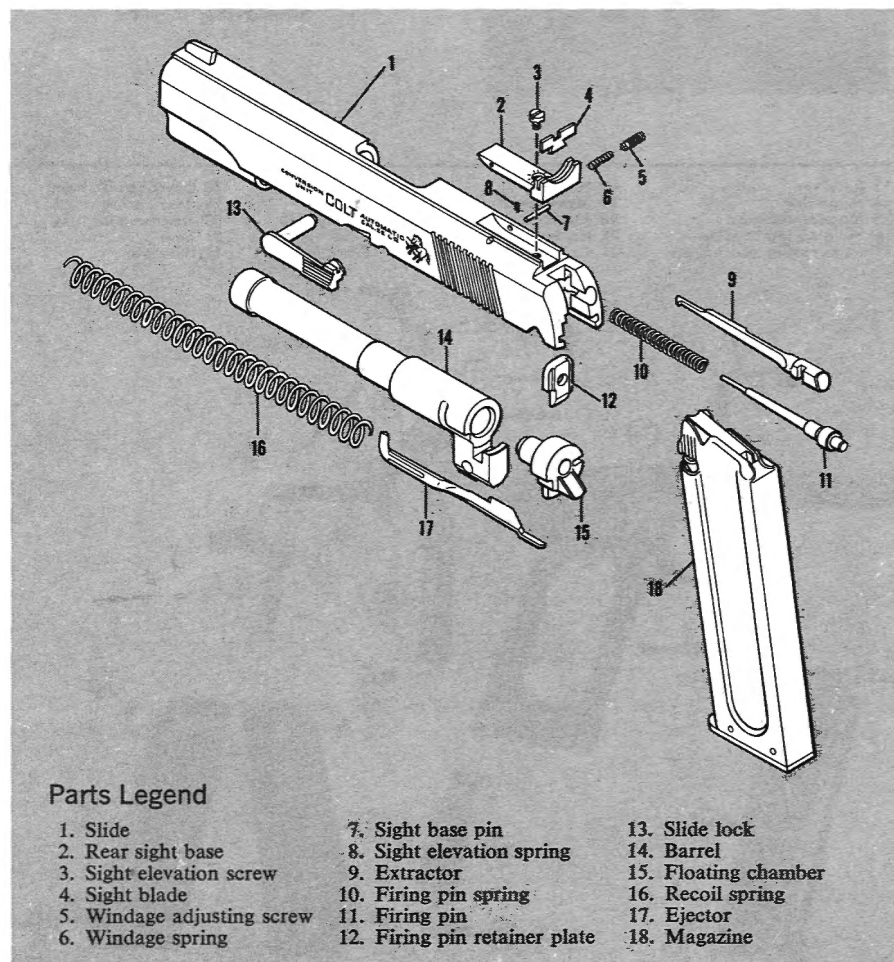
floating chamber was the answer. The floating chamber is in effect a movable piston attached to the end of the barrel. When the .22 cartridge is fired, some of the gases are trapped between the barrel and the movable chamber. The gases thrust the chamber back with enough force to operate the slide and thus

closely duplicate the recoil of the cal. .45 cartridge.

The Colt conversion unit has been modernized from time to time. The original unit was marked "Colt Service Model Conversion" with "Ace" inside of a triangle. A later model had the Colt rampant and the words ".22-.45 Conversion" added to the slide. This model eliminated the spring wire on the barrel that retained the ejector. The latest model illustrated here has a Micro adjustable rear sight and the serrations on the slide are slanted.

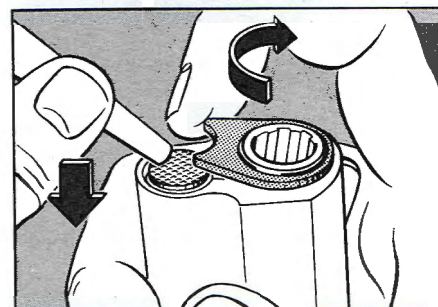
The current .22 conversion unit can be installed on any Model 1911-type pistol as well as the Super .38. But this unit cannot be used on the Colt Commander pistol.

A .45-.22 conversion unit to convert the cal. .22 Service Ace to cal. .45 ACP was manufactured for a few years, but did not prove popular. It was dropped following World War II.



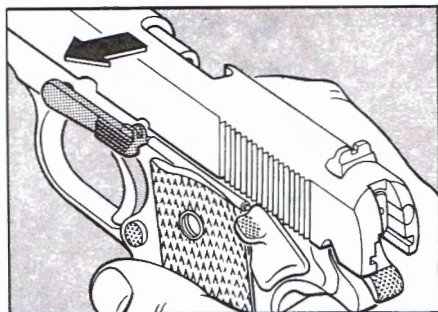
## Parts Legend

- |                            |                               |                      |
|----------------------------|-------------------------------|----------------------|
| 1. Slide                   | 7. Sight base pin             | 13. Slide lock       |
| 2. Rear sight base         | 8. Sight elevation spring     | 14. Barrel           |
| 3. Sight elevation screw   | 9. Extractor                  | 15. Floating chamber |
| 4. Sight blade             | 10. Firing pin spring         | 16. Recoil spring    |
| 5. Windage adjusting screw | 11. Firing pin                | 17. Ejector          |
| 6. Windage spring          | 12. Firing pin retainer plate | 18. Magazine         |

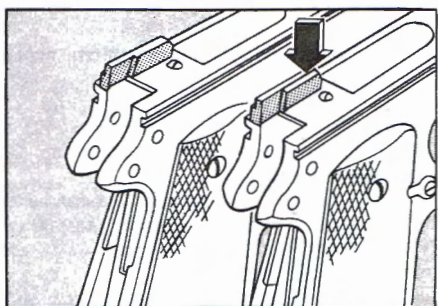


**1** Center-fire slide assembly and magazine must be removed prior to installing conversion unit. First remove magazine and clear chamber. Push in knurled end of plug below barrel and rotate bushing 1/4-turn clockwise. Ease out plug and recoil spring. Turn bushing counter-clockwise until it can be eased off barrel

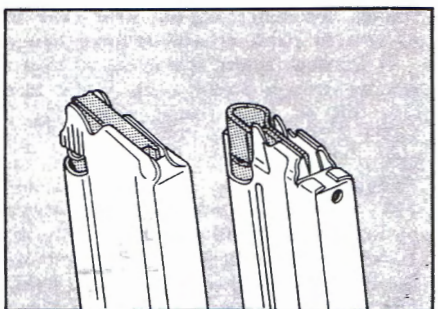




**2** Pull slide to rear until smaller recess in lower edge of slide is even with end of slide stop. Press end of slide stop that projects from right side of frame and pull it free from left side. Ease slide and barrel forward off frame. Turn conversion unit upside down. Insert recoil spring guide in conversion unit recoil spring and place assembly in position on barrel. Slide conversion unit on frame. Install slide stop from the conversion unit and bushing of center-fire barrel. Place plug over recoil spring, then depress plug until bushing can be rotated  $\frac{1}{4}$ -turn counter-clockwise to secure plug and recoil spring assembly in slide



**3** If conversion unit binds when installing it on a Super .38 pistol, the ejector may be at fault. To correct this, file a  $\frac{1}{32}$ " wide bevel (arrow) along inside edge of ejector. This alteration to the gun will not affect its operation when firing cal. .38 cartridges

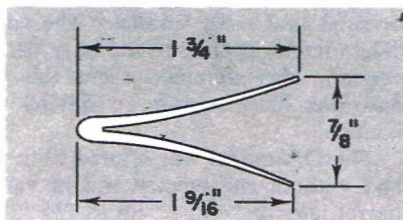


**4** Colt Ace (r.) and conversion unit magazines are not interchangeable although they handle same ammunition. Conversion unit magazines are usually marked as such on the base. If not, they can be recognized by the narrow follower as compared with hollow sheet metal follower of Ace magazine. Follower button on conversion unit magazine runs diagonally up the magazine, while follower button of Ace magazine runs parallel to back and front strap

To replace missing parts . . .

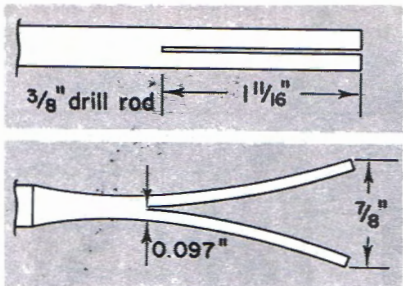
## Spring Making

**T**wo mainsprings had to be made for a fine Lefever shotgun because parts for this gun were no longer available. These springs were of the flat leaf type forged to form a V.



New springs were made from  $\frac{3}{8}$ " drill rod, which is of high carbon content and can be hardened.

The rod was slit to a depth of  $1\text{-}11/16$ " with a hacksaw, the cut being made very carefully along the



center of the rod. This portion was squared up on a grinding wheel, and cut to within about  $1/16$ " of the finished width and thickness of the spring at bottom of the V. The grinding was done very slowly in order not to overheat or burn the metal. At no time was the heat produced by grinding sufficient to color the steel.

The piece was then milled on a drill press milling attachment to the exact width and thickness at the bottom of the V or butt end of the original springs. Alternatively the piece could have been worked to these dimensions by grinding and filing. Care was taken to finish each leaf of the spring to a uniform thickness of .097", which was to be the finished thickness at the V.

The leaves were then bent cold to the shape of the original springs.

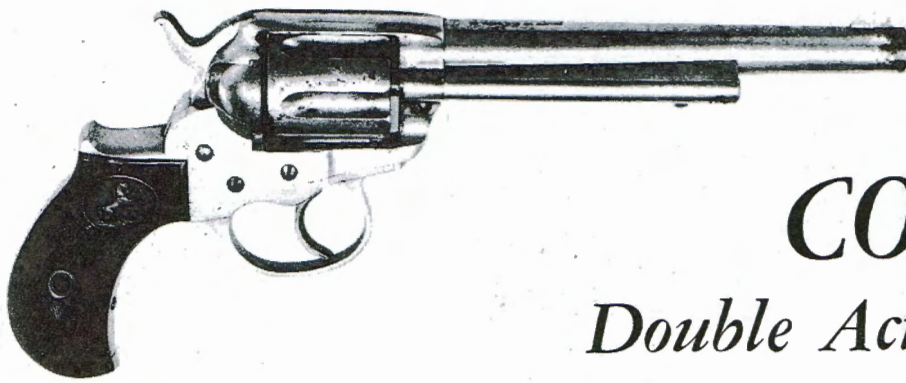
Ends of the leaves were cut to the exact lengths required. Each leaf was tapered to agree with the original spring by grinding and filing the inside of the V. When the leaves had been completed, the springs were cut from the stock leaving plenty of metal for shaping the butt of the spring.

Each spring was polished before heat-treatment. Such work must be polished to remove tool marks, which can cause it to break from a stress concentration around even a small scratch or notch in the surface.

A temperature-controlled furnace not being available for heat-treating, it was necessary to improvise a method. The springs, held by wire handles, were heated to cherry red in the flame of a gasoline blowtorch and quenched in water at room temperature. This treatment made the steel strong, but very hard and brittle. It then had to be drawn at between  $600^{\circ}$  and  $650^{\circ}$  Fahrenheit to produce the toughness required in springs. Pure lead, which melts at about  $620^{\circ}$  F., was heated until it just became liquid when removed from the heat. This was done to prevent the molten lead from becoming hotter than about  $620^{\circ}$  F. The springs were immersed in the molten lead for about 15 seconds and then quickly quenched in water. Care was taken to keep the springs from touching the iron pot, which may have been at a higher temperature than the lead. Steel will float on molten lead, so it was necessary to hold the pieces below the surface with wire handles. The springs were then polished to match the finish of the original springs.

Since it was necessary to compress the springs fully to install them in the gun, they were checked by compressing them in a vise and measuring after release to verify that they had returned to their original dimensions. The springs proved to be completely satisfactory both under test and in service.—MURREL O. WILBURN





# COLT

## Double Action Revolver

ALTHOUGH self-cocking revolvers had been in use for many years prior to 1877, it was not until that year that such an arm was offered by Colt's Patent Fire Arms Mfg. Co., of Hartford, Conn. Designed in 1876 by Colt employee William Mason, the Double Action or DA model was initially introduced in cal. .38 only. Subsequently it was offered in cal. .41, with a small quantity also made in cal. .32. Distinctive features of the DA model are the double hand, birdshead grip, and the absence of the customary bolt locking notches on outer surface of the cylinder.

Collectors commonly refer to this model as the 'Lightning' although this

was not a factory appellation, having been apparently coined by B. Kittridge & Co., of Cincinnati, Ohio, who used it in their arms catalogs to identify the original cal. .38 model. The name 'Thunderer', applied to the later cal. .41 version, also stemmed from this firm and was likewise not an official Colt name.

The DA model was offered both with and without rod ejector and in various barrel lengths from 2" up to 7½", with the 7" and 7½" barrel lengths available on special order only. Manufacture of this model ceased in 1910.

JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.

### DISASSEMBLY PROCEDURE

Due to the intricacy of the lock mechanism of the 'Lightning' Colt, special care should be taken in disassembling to note the exact relative positions of all parts to facilitate correct reassembly.

To remove cylinder (8), open loading gate (13) and press in cylinder pin lock screw (10). Draw cylinder pin (7) forward as far as it will go. Cylinder may be pushed out of main frame (9) after pulling hammer (29) back slightly. This is sufficient disassembly for normal cleaning purposes.

To disassemble lock mechanism, proceed as follows:

a) Remove grip screw (52) and grips (49). Remove backstrap screws (42) and butt screw (43) and drop backstrap (41) off main frame (9).

b) Loosen mainspring tension screw (47) and remove mainspring screw (40). Disengage top of mainspring (39) from stirrup (33) and remove.

c) Remove rear and front trigger guard screws (45 & 46), pull trigger (18) back slightly, and remove trigger guard (44) from main frame, exposing inside lock mechanism.

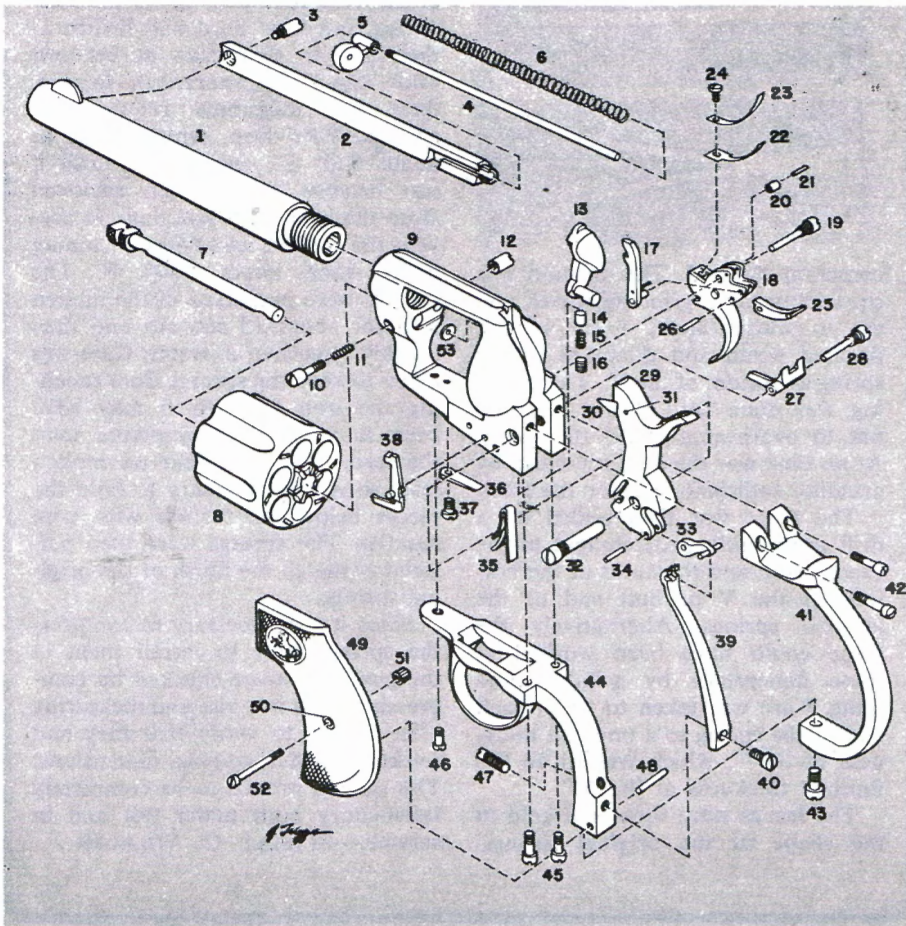
d) Remove sear screw (28) and drop out sear (27) and hand and cylinder stop tension spring (35).

e) Remove hammer screw (32) and drop hammer (29) down out of main frame. Disengage trigger strut (25) from its seat in hammer and remove hammer.

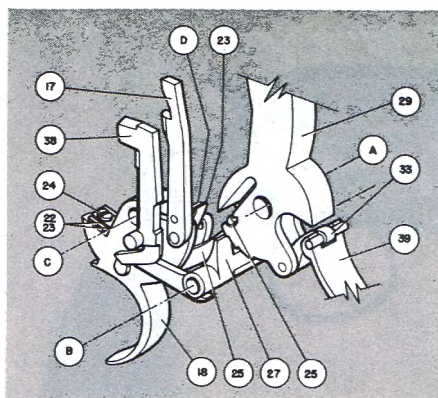
f) Loosen trigger spring screw (37) and remove trigger screw (19). Draw trigger (18) out of main frame with hand (17) intact. Cylinder stop (38) may be dropped out of its hole in left side of main frame. Trigger strut spring (22) and hand spring (23) may be removed from trigger (18) by unscrewing hand and strut spring screw (24). Trigger strut (25) and trigger roller (20) may be removed from trigger by drifting out their respective retaining pins (26 & 21).

g) Ejector assembly (2,3,4,5,6) may be removed by unscrewing ejector housing screw (3) and drawing ejector housing (2) forward out of its seat in main frame. Loading gate (13) may be removed by unscrewing loading gate catch screw (16) from underside of main frame. Drop out loading gate catch and spring (14 & 15). Swing loading gate down and pull forward out of main frame.

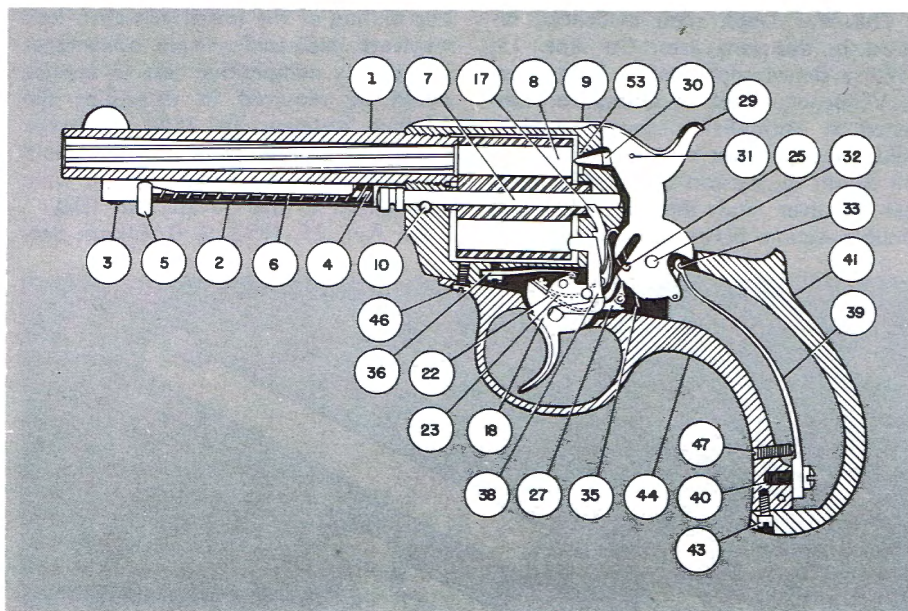
Reassembly procedure follows the reverse order of the steps outlined above.







**1** This perspective view shows lock mechanism with all parts in proper position as they are when assembled inside the main frame. For greater clarity of detail, hammer screw (32), trigger screw (19), and sear screw (28) are not shown but their respective centerlines are indicated at "A", "B", and "C". Also omitted for clarity is hand and cylinder stop tension spring (35) which is inserted into bottom of frame so its wider, flat arm presses against rear of hand cut in frame and its 2 forward, curving arms press against rear edges of hand and cylinder stop respectively. Trigger spring (36) is also omitted to avoid confusion. "D" indicates the pin of the hand against which hand spring (23) bears



**2** This drawing shows entire revolver in longitudinal section and demonstrates proper relationship of all interior parts. Note that hand and cylinder stop tension spring (35) is shown here with its long arm behind hammer for clarity only. In assembling the lock mechanism in this position, this spring is on the left side of hammer

### Parts Legend

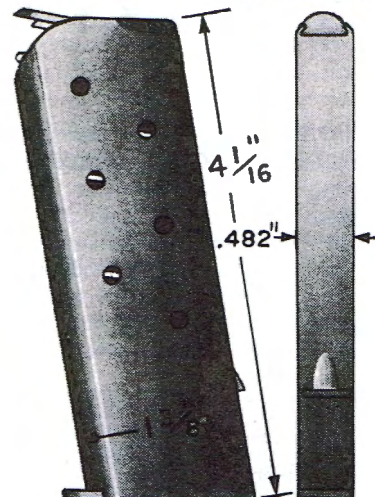
- |                                    |   |
|------------------------------------|---|
| 1. Barrel                          | 29. Hammer                                    |
| 2. Ejector housing                 | 30. Firing pin                                |
| 3. Ejector housing screw           | 31. Firing pin rivet                          |
| 4. Ejector rod                     | 32. Hammer screw                              |
| 5. Ejector rod head                | 33. Stirrup                                   |
| 6. Ejector spring                  | 34. Stirrup pin                               |
| 7. Cylinder pin                    | 35. Hand and cylinder stop tension spring     |
| 8. Cylinder                        | 36. Trigger spring                            |
| 9. Main frame                      | 37. Trigger spring screw                      |
| 10. Cylinder pin lock screw        | 38. Cylinder stop                             |
| 11. Cylinder pin lock screw spring | 39. Mainspring                                |
| 12. Cylinder pin lock nut          | 40. Mainspring screw                          |
| 13. Loading gate                   | 41. Backstrap                                 |
| 14. Loading gate catch             | 42. Backstrap screws (2)                      |
| 15. Loading gate catch spring      | 43. Butt screw                                |
| 16. Loading gate catch screw       | 44. Trigger guard                             |
| 17. Hand                           | 45. Rear trigger guard screws (2)             |
| 18. Trigger                        | 46. Front trigger guard screw                 |
| 19. Trigger screw                  | 47. Mainspring tension screw                  |
| 20. Trigger roller                 | 48. Grip pin*                                 |
| 21. Trigger roller pin             | 49. Grips, hard rubber (left hand only shown) |
| 22. Trigger strut spring           | 50. Escutcheon*                               |
| 23. Hand spring                    | 51. Escutcheon nut*                           |
| 24. Hand and strut spring screw    | 52. Grip screw*                               |
| 25. Trigger strut                  | 53. Recoil plate                              |
| 26. Trigger strut pin              |   |
| 27. Sear                           |   |
| 28. Sear screw                     |   |

\* Grip pin, grip screw, and escutcheons were not supplied on 'Lightning' revolvers with one-piece hardwood grips.

## PISTOL MAGAZINES



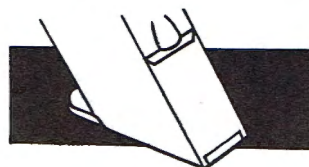
Colt 1903  
Cal. .38  
Pocket Pistol



The Colt Model 1900 cal. .38 pistol set the grip pattern for the Model 1902 Sporting Model and the Model 1903 Pocket pistol. All fired the powerful .38 ACP cartridge and magazines are interchangeable. The Model 1903 Pocket pistol was first sold with a rounded hammer, but in 1908 this was replaced by a spur hammer. Like all early Colt pistols, the Model 1903 was superbly made and finished.



The flat sheet-metal follower with slightly beveled end is characteristic of the .38 ACP magazine. It will be found unmarked, or with "Cal. .38" or "Pat. Sept. 8, 1884" on the floorplate. This 7-shot magazine has either nickel or blued finish.



The only obvious identifying characteristic is the lug or catch that protrudes from the backstrap and the milled cut below it. This lug retains the magazine in the gun.—E. J. HOFFSCHMIDT



# COLT DOUBLE-ACTION

## NEW ARMY

and

## NEW NAVY REVOLVERS

By James M. Triggs

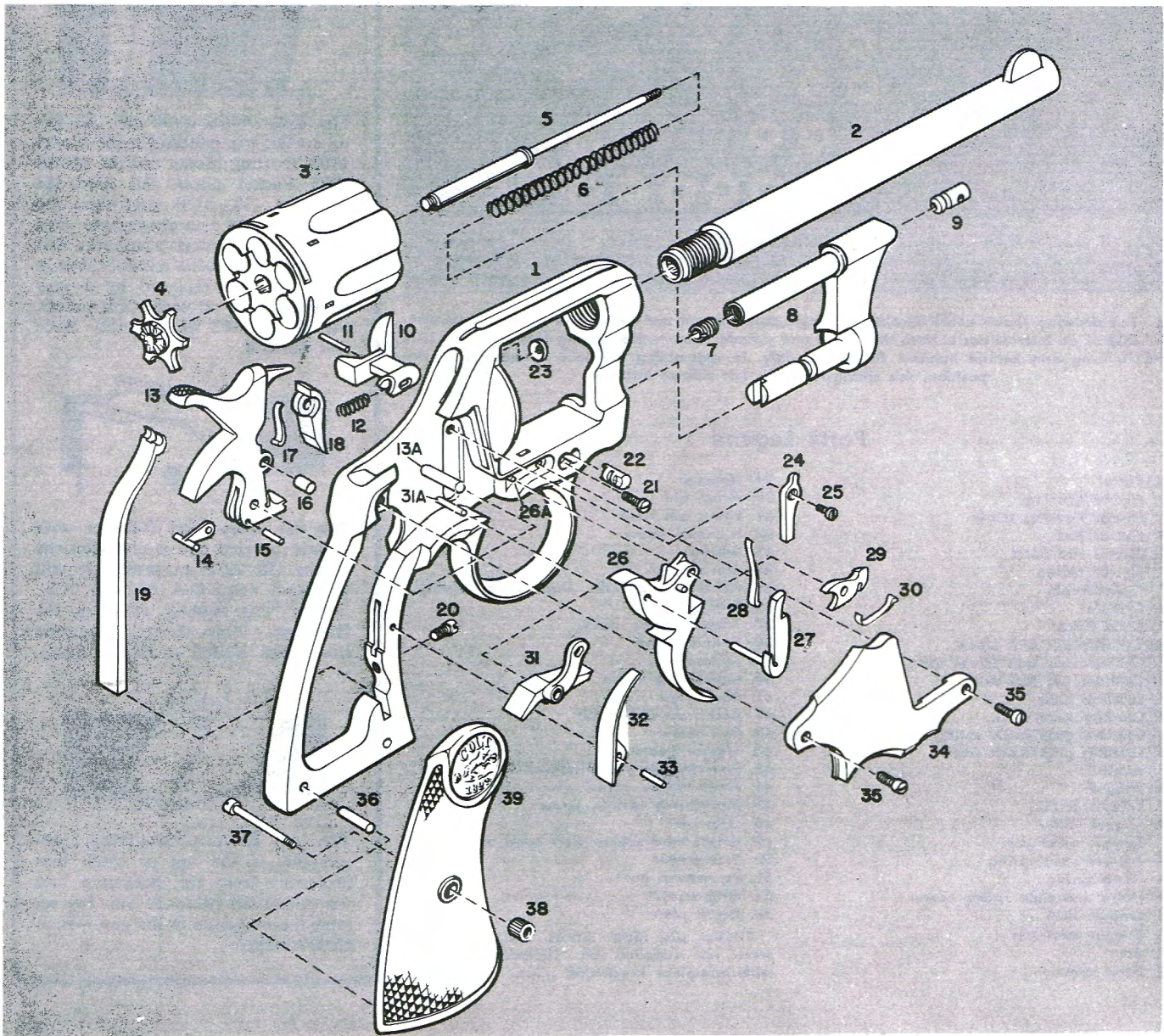


**I**N 1889 Colt's Patent Fire Arms Mfg. Co., Hartford, Conn., offered their first swing-out cylinder revolver. It was chambered for the Colt cal. .38 long and short cartridges. Almost simultaneously this revolver was adopted by the Navy Dept. The Army at the time was equipped with cal. .45 Colt and Smith & Wesson single-action revolvers.

The War Dept. soon evidenced interest in this new arm. On Apr. 15, 1889, a Board appointed by Brig. Gen. S. V. Benet, Chief of Ordnance, convened at Springfield Armory, Springfield, Mass., to test samples of the cal. .38 Smith & Wesson Safety Hammerless revolver and the cal. .38 Colt Double-Action Navy pattern revolver.

The finding of the board was that both revolvers possessed certain advantages and that a competitive test in service would be required to determine the superior weapon. In 1890 Ordnance purchased 100 each of the Colt and Smith & Wesson revolvers which were then issued to the Cavalry for trial.

On Apr. 25, 1892, S. B. Elkins, Sec-





retary of War, approved the recommendation by the Chief of Ordnance, Brig. Gen. D. W. Flagler, that a cal. .38 Service revolver be adopted in lieu of the cal. .45 Colt revolver then standard. Flagler's recommendation was based upon reports of troop commanders who had tested these revolvers plus the findings of a final selection board convened Nov. 28, 1891, which recommended adoption of the Colt revolver with modifications to correct certain defects encountered during the trials. The board reconvened Mar. 1, 1892, to examine a Colt revolver incorporating certain improvements and recommended its adoption as modified.

The initial contract let to the Colt's Patent Fire Arms Mfg. Co., Hartford,

Conn., was for 5000 cal. .38 double-action revolvers of the final pattern approved for adoption by the Secretary of War. This revolver was designated Army Model 1892 and the solid-head reloadable case ammunition for it was produced at Frankford Arsenal. Additional quantities of the Model 1892 revolver were later ordered and issued.

Use of the Model 1892 in service indicated that its design, which allowed operation of the hammer without fully closing the cylinder, could damage the arm. Accordingly, a hammer and trigger lock was devised to correct this condition. Model 1892 revolvers in the hands of troops were recalled and replaced with Model 1894 revolvers obtained under contract with Colt's.

Subsequently the Model 1892 revolvers were reworked by Colt's to conform with Model 1894 specifications.

### Various Service models

A summation of the various Service models is contained in the *Description of the Colt's Double-Action Revolver Caliber .38*, published in 1917 by the Government Printing Office, which states: "The Colt's double-action revolvers, caliber .38, in service are marked Army Models 1894, 1896, 1901, and 1903. The first model issued was that of 1892, but all revolvers of that model were altered into model of 1894 by the addition of the locking lever, which is pivoted by its screw in a recess (Text continued on following page)

### DISASSEMBLY PROCEDURE

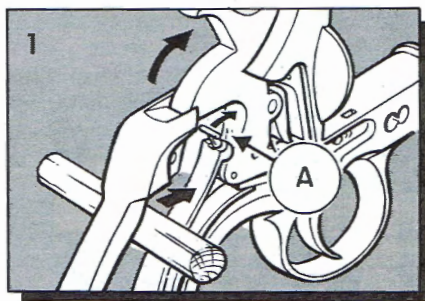
To remove cylinder and crane assembly, unscrew crane lock screw (21) and withdraw crane lock (22). Press latch (10) back and swing out cylinder. Grasp crane (8) and pull forward out of frame (1). Further disassembly of cylinder and crane is not recommended. However, if this disassembly is absolutely necessary, note

### Parts Legend

1. Frame
2. Barrel
3. Cylinder
4. Ejector & ratchet
5. Ejector rod
6. Ejector spring
7. Crane bushing
8. Crane
9. Ejector head
10. Latch
11. Latch pin
12. Latch spring
13. Hammer
- 13A. Hammer pin
14. Stirrup
15. Stirrup pin
16. Strut pin
17. Strut spring
18. Strut
19. Mainspring
20. Mainspring tension screw
21. Crane lock screw
22. Crane lock
23. Recoil plate
24. Locking lever
25. Locking lever screw
26. Trigger
- 26A. Trigger pin
27. Hand
28. Hand spring
29. Bolt
30. Bolt spring
31. Rebound lever
- 31A. Rebound lever pin
32. Rebound lever spring
33. Rebound lever spring pin
34. Side-plate
35. Side-plate screws (2)
36. Stock pin
37. Stock screw
38. Escutcheons (2), right only shown
39. Stocks (2), right only shown

that, after pressing in ejector rod (5), clearing ratchet from cylinder, ejector and ratchet (4) must be unscrewed from ejector rod clockwise and a special wrench or spanner will be necessary to remove crane bushing (7).

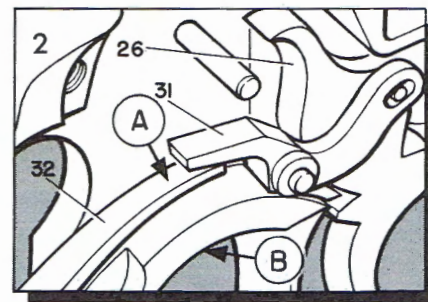
To disassemble lock mechanism, unscrew stock screw (37) and remove stocks (39). Remove side-plate screws (35). Loosen side-plate (34) by turning revolver over and tapping frame with a fiber or wooden mallet. If it is necessary to pry out the side-plate to any extent, do so most gently and gradually to avoid burring edges of side-plate cut in frame. Remove side-plate, exposing lock mechanism.



Lift hand (27) out of trigger. Loosen mainspring tension screw (20). Pull hammer to full cock and slip a 1/2" wooden dowel or handle of a small screwdriver between mainspring (19) and rear strap of frame. Pull trigger, releasing hammer and allowing stirrup (14) to rise clear of its seat in end of mainspring as shown at "A" in sketch 1. Remove dowel and pull mainspring up out of its seat in frame. Rebound lever spring (32) may be removed by drifting out its pin (33). Pull hammer back to almost full-cock position and lift out of frame. With the blade of a small screwdriver, lift bolt (29) up off its pin and remove. Rebound lever (31) and trigger (26) may now be lifted out of frame. Locking lever (24) is removed by unscrewing locking lever screw (25). Latch may be removed by drifting out latch pin (11) with a very thin punch,

withdrawing latch (10) and spring (12) toward the front.

Removal of hammer pin (13A), trigger pin (26A), or rebound lever pin (31A) from frame is not recommended and is seldom if ever necessary.



In reassembling lock mechanism, replace latch assembly, locking lever, and trigger first. Replace rebound lever spring and pin. Compress tip of rebound lever spring with pliers, the jaws of which have been taped or otherwise covered to protect the finish of the arm, applied at A and B as shown in sketch 2. Drop rebound lever into place while holding spring compressed fully. A little juggling will be necessary when replacing bolt (29), and bolt spring (30) must be pressed down with blade of small screwdriver or other small tool to clear forward arm of rebound lever before bolt can be pressed all the way down into position on trigger pin (26A).

Pull trigger back and replace hammer. Replace mainspring in its seat and compress with a dowel as previously described. Pull stirrup back until it is in position over its seat in tip of mainspring. Pull trigger releasing hammer and withdraw dowel. Replace hand and push forward into its slot. When replacing side-plate, be sure hand spring slips into the recess milled into reverse of side-plate. Replace side-plate screws and stocks. Replace cylinder and crane assembly. Place crane lock and crane lock screw together and press into frame, tightening crane lock screw as it engages its threads.



in the left side of the frame and prevents the hammer being cocked until the cylinder is positively closed and locked. The models of 1894 and 1896 are identical. The model of 1901 differs from the previous models in having the butt swivel for lanyard. The model of 1903 differs from the model of 1901 in having the diameter of the bore reduced to insure better accuracy and in having a smaller and better shaped handle. The model of 1901 revolvers last made have the thinner stocks".

It is important to note that Service arms are often turned in for repair at arsenals and that replacement parts may differ in pattern from the original. A case in point is use of the .357" groove diameter Model 1903 barrel for rebarreling of Models 1892, 1896, and 1901 revolvers with original .363" groove diameter barrels.

#### Commercial versions

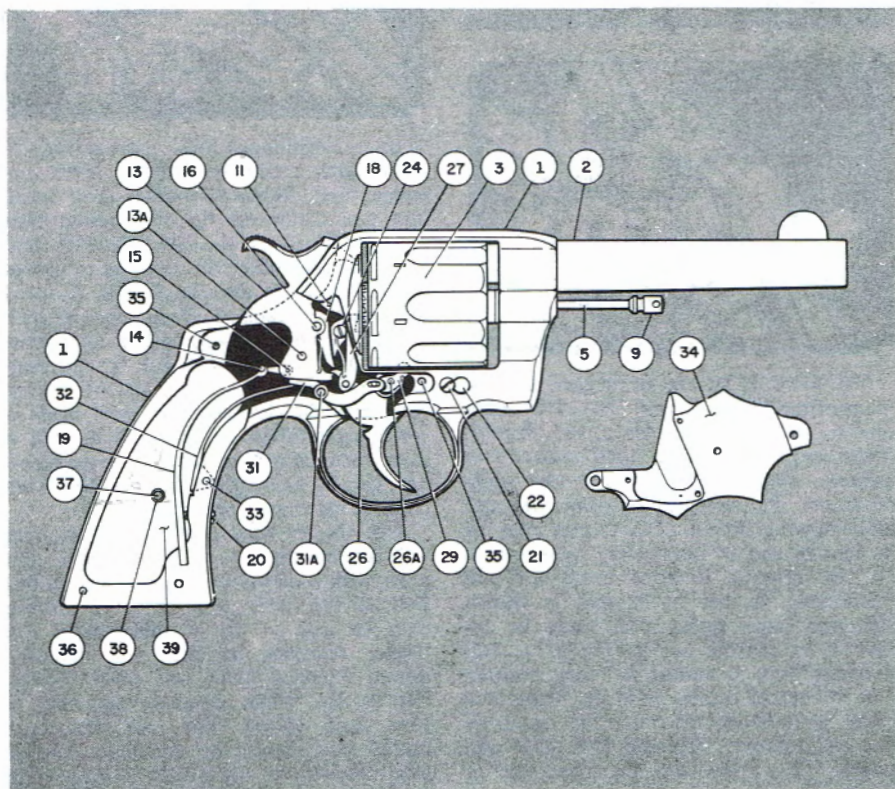
Concurrent with production of Service revolvers for the Navy and War Depts., Colt's manufactured commercial versions with hard-rubber grips (the Service models had plain walnut grips). These were advertised as New Army and New Navy revolvers and in catalogs and advertisements were given the Service model designations, such as New Navy Model of 1895 or New Army Model of 1894, despite the fact

that the guns were substantially identical. The Service revolvers had 6" barrels and were chambered for the cal. .38 Colt long and short cartridges. Commercial models were offered in 3", 4½", and 6" barrel lengths and in several calibers, including .38 Colt long and short, .41 Colt long and short, .32-20 WCF, and .38 Special.

In the spring of 1904 Colt's offered a target version designated Officers Model and chambered for the .38 S&W Special cartridge. It featured adjustable rear and front sights and immediately became popular with target shooters.

The Marine Corps in 1905 adopted a Colt cal. .38 revolver mechanically identical to the Army and Navy arms, but with rounded, narrower butt. The Service version was furnished with butt swivel, but this fixture was not present on the companion commercial model, optionally available in blue and nickel finishes.

In 1908 production of the New Army, New Navy, Marine Corps Model, and 1904 pattern Officers Model revolvers was discontinued. In their stead Colt's introduced the Colt Army Special revolver with greatly improved lock-work, double leaf mainspring, and cylinder revolving to the right. The target version of the Army Special revolver, also introduced in 1908, was again designated Officers Model. ■

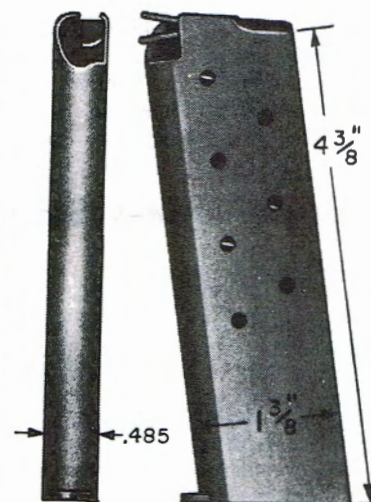


This sectionalized view shows all of the lock mechanism parts in the proper relationship when assembled. Note that the inner (reverse) face of the side-plate (34) is shown here

## PISTOL MAGAZINES



Colt .38 Military  
Model Pistol



The Browning-designed Colt .38 Military Model pistol was produced commercially from about 1902 to 1928. Commonly called the Military Model 1902, this pistol fires the .38 ACP cartridge and should not be used with the more powerful .38 Super round.



The blued sheet steel 8-round magazine of the Model 1902 resembles that of the Colt .38 Sporting Model pistol, but is ⅜" longer. One of the main identifying features is the bent-down part of the follower that lifts the slide hold-open catch when the magazine is empty.



Another identifying feature is the backstrap notch. The base bears the marking shown or "MIL. COLT .38 CAL." Some bases are unmarked.  
—E. J. HOFFSCHMIDT





# Colt Deringer No. 3

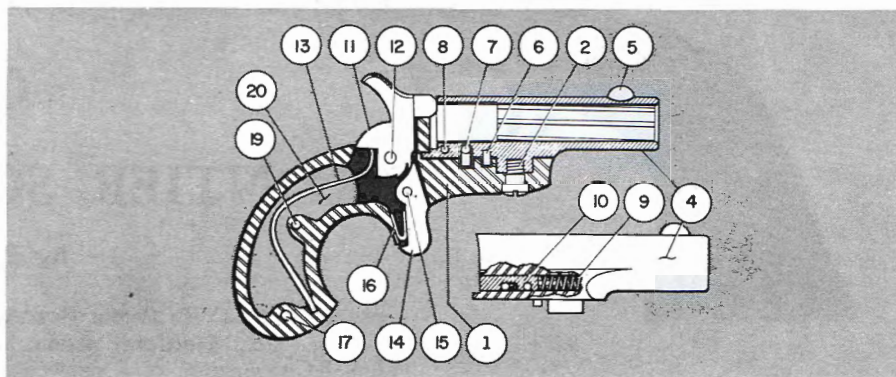
By James M. Triggs

COLT's Patent Fire Arms Mfg. Co., of Hartford, Conn., began manufacture of single-shot cartridge pistols about 1872 after the acquisition of patents and other assets of the National Arms Co. of Brooklyn, N. Y. The National Arms Co., formed about 1863, was the successor to the Moore Patent Fire Arms Co., manufacturer of the single-shot cartridge pistol patented (No. 31,473) Feb. 19, 1861, by Daniel Moore. As made by Colt's, the National Deringer (Moore patent) was offered with both metal and wood stocks in cal. .41 rimfire only. At about the same time Colt's also began production of a small cal. .41 rimfire single-shot pistol based upon Patent No. 105,388 granted July 12, 1870, to Colt employee F. Alexander Thuer. The Thuer pistol was of side-swinging barrel type, similar in appearance to side-swing single-shot pocket pistols manufactured at the time by J. M. Marlin, Hopkins & Allen, Forehand & Wadsworth, and others. The unique patented feature of the Thuer pistol was the automatic ejector which eliminated the necessity for manual case ejection after opening of the breech. As stated in a Colt advertisement of 1872, "The exploded shell need not be touched by the fingers."

The Thuer pistol weighed 6½ ozs. as against 10 ozs. for the Colt-National pistol with metal grips. It was available with silver-plated frame and blued barrel, or with silver-plated frame and barrel. Stocks were optionally of walnut, rosewood, ivory, or pearl. There was a change made in the barrel marking as well as changes in shape of hammer and frame during its period of manufacture, which extended to 1912. Frame of the pistol was always of bronze, with other parts of iron.

Present collectors designate the Thuer-designed pistol as the Third Model whereas the Colt-National metal-grip and wood-grip pistols are designated First Model and Second Model respectively.

In late 1959 Colt's introduced the Colt Deringer No. 4 chambered for the cal. .22 short cartridge. Primarily offered to interest the collector of Colt arms, it features a frame and barrel die-cast from zinc alloy, but is otherwise a close replica of the original Thuer model.



## DISASSEMBLY PROCEDURE

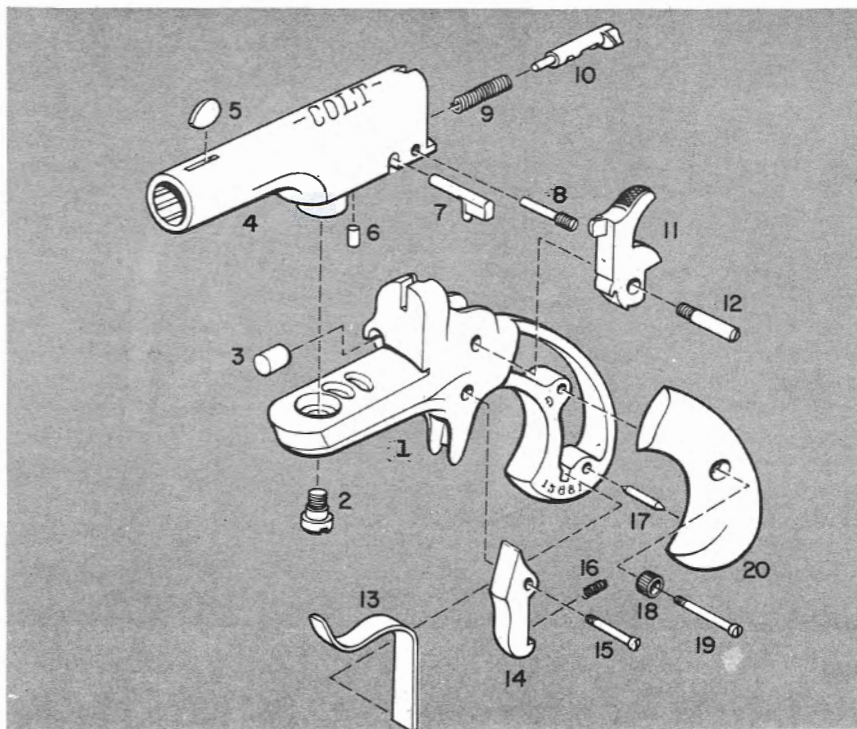
To disassemble barrel assembly, remove barrel screw (2) from underside of frame (1). With hammer at half-cock or safety position, swing rear of barrel (4) to right and remove barrel from frame. Remove barrel latch and ejector screw (8) from left side of barrel while pressing barrel latch and ejector in. Withdraw barrel latch & ejector (10) and spring (9) from rear of barrel. Draw barrel latch release pin (7) from left side of barrel. Removal of barrel stop pin (6) is seldom necessary and should not be attempted during normal disassembly.

To disassemble lock mechanism, remove grip screw (19) and grips (20).

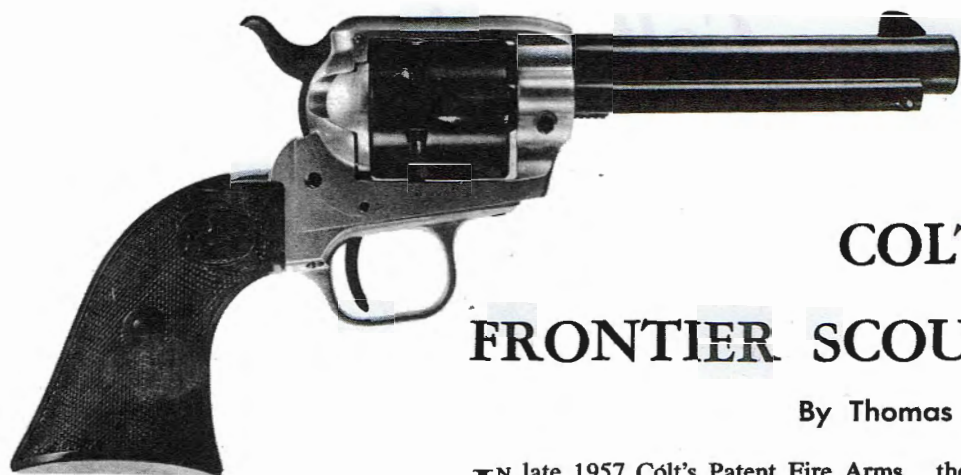
Mainspring (13) may be tapped out of its seat in frame and removed. Remove hammer screw (12) from left side of frame and withdraw hammer (11) from top of frame while pressing back on trigger. Remove trigger screw (15) from left side of frame and drop trigger (14) and trigger spring (16) out bottom of frame. NOTE: Trigger spring shown in exploded drawing is of the coil type which rests in a shallow hole at rear of trigger. Earlier types are provided with a flat, V-shaped trigger spring, shown in longitudinal-section drawing. The barrel latch bushing (3) may be removed only by drilling. Reassemble in reverse. ■

## Parts Legend

- |                                  |  |
|----------------------------------|--|
| 1. Frame                         | 11. Hammer                             |
| 2. Barrel screw                  | 12. Hammer screw                       |
| 3. Barrel latch bushing          | 13. Mainspring                         |
| 4. Barrel                        | 14. Trigger                            |
| 5. Front sight                   | 15. Trigger screw                      |
| 6. Barrel stop pin               | 16. Trigger spring (flat or coil type) |
| 7. Barrel latch release pin      | 17. Grip pin                           |
| 8. Barrel latch & ejector screw  | 18. Escutcheon (2, right & left)       |
| 9. Barrel latch & ejector spring | 19. Grip screw                         |
| 10. Barrel latch & ejector       | 20. Grip (2, right & left)             |





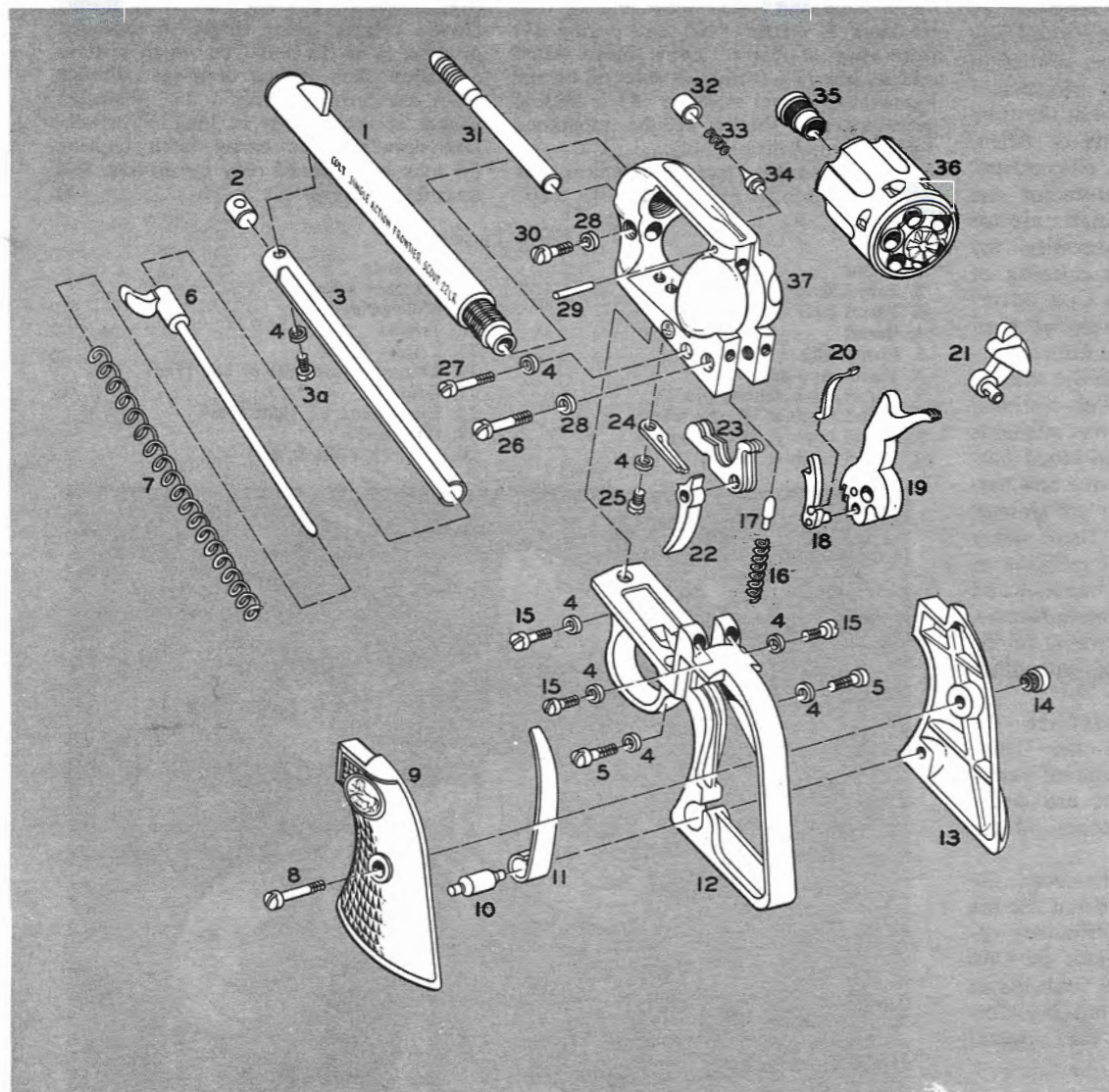


# COLT FRONTIER SCOUT REVOLVER

By Thomas E. Wessel

**I**N late 1957 Colt's Patent Fire Arms Mfg. Co., Hartford, Conn., announced production of a new cal. .22 long rifle single-action revolver patterned after their time-tried Model P Single-Action Army revolver. Designated Frontier Scout, it is about  $\frac{1}{2}$

the size of its prototype and features a 1-piece aluminum alloy grip frame. The cylinder frame is also of aluminum alloy, but barrel and cylinder are of steel. Barrel length is  $4\frac{3}{4}$ ". Empty weight is 1 lb. 7 ozs. Initially the Frontier Scout was furnished only in



## Parts Legend

1. Barrel
2. Ejector tube plug
3. Ejector rod tube
- 3a. Ejector tube screw
4. Nylon washer, small (8)
5. Backstrap screw, bottom (2)
6. Ejector rod
7. Ejector spring
8. Stock screw
9. Stock, left
10. Stock pin
11. Mainspring
12. Backstrap
13. Stock, right
14. Stock screw nut
15. Backstrap screw, top (3)
16. Gate spring
17. Gate detent
18. Hand and post
19. Hammer
20. Hand spring
21. Gate
22. Trigger
23. Bolt
24. Bolt and trigger spring
25. Bolt spring screw
26. Hammer screw
27. Bolt and trigger screw
28. Nylon washer, large (2)
29. Recoil cup pin
30. Base pin screw
31. Base pin
32. Recoil cup
33. Firing pin spring
34. Firing pin
35. Cylinder bushing
36. Cylinder
37. Frame

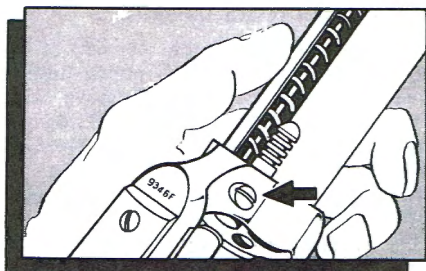


dual-tone finish. Grip and cylinder frames were bright with cylinder and barrel assembly blued. In September 1958 Colt's announced an all-blue version of the Frontier Scout.

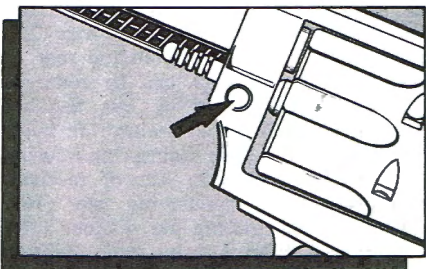
The 9½"-barrel Buntline Frontier Scout was introduced in November 1958, in full-blue finish only.

In July 1959 Colt's began delivery of Frontier Scout revolvers chambered for the new cal. .22 Winchester Magnum Rimfire cartridge.

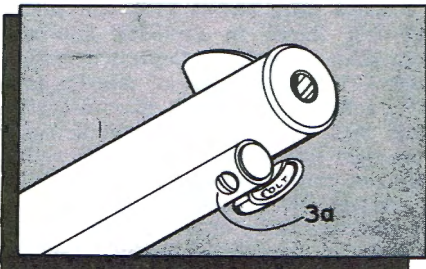
All of the above models are in current production and are regularly furnished with checkered hard-rubber grips. Walnut grips are available at extra cost. ■



**1** To remove cylinder (36), first insure that the hammer (19) is in half-cock position with cylinder free to rotate. Open loading gate (21). Next, using screwdriver, remove base pin screw (30) and washer (28). Withdraw base pin (31). Cylinder may now be removed from loading gate side of arm



**2** Reassemble cylinder into revolver in reverse order. Locking notch in base pin must be properly aligned with base pin screw hole in left side of frame (37), otherwise screw cannot be replaced

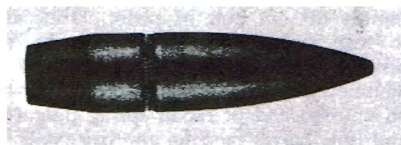


**3** To remove ejector rod tube (3) and assembly, including ejector rod (6) and ejector spring (7), unscrew ejector tube screw (3a) holding assembly to right lower side of barrel (1). Entire assembly may now be removed. Reassemble in reverse order, insuring that small nylon washer (4) is replaced

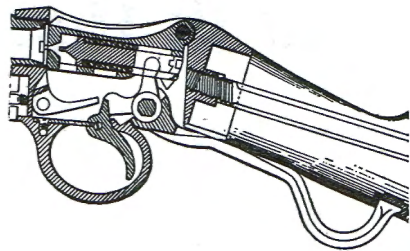
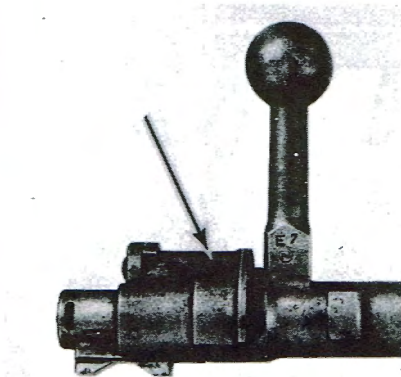
## Illustrated Definitions

Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not intended to be technically or legally complete

**Martini action** — Single-shot breech action with lever-actuated breech-block pivoted to upper rear of receiver and with spring-impelled firing pin. This action is basically an 1862 design of H. O. Peabody, an American, but incorporates an improved spring-impelled firing mechanism developed by Friedrich Martini of Switzerland. It was extensively used in days of blackpowder for military and sporting rifles, and to a much lesser extent for shotguns and pistols. It is still used for hunting and target rifles, especially in England and Switzerland, and is popular with many target shooters because of its fast lock time.



**Tangent (tangent-curve) sight** — Rifle or pistol rear sight, most often of open type, having on its sight leaf an elevation slide that contacts curved or inclined surfaces on upper part of sight base. The slide is movable to adjust elevation, and is usually provided with a spring-loaded catch to engage notches on the leaf. This sight was introduced in the late 1800's in Europe, and is still used in many foreign countries. Because of its simplicity and strength, it is popular for military rifles.



**Boattail (streamlined; torpedo) bullet** — Bullet with rear portion tapered to permit air to flow around bullet base more smoothly, especially at velocities below speed of sound, and thus reduce vacuum drag and increase range and flatness of trajectory. Boattail bullets were used experimentally by Sir Joseph Whitworth of England in the middle 1800's, and France adopted a rifle-caliber boattail bullet (Balle D) in 1898. As a result of experience from World War I, during which machine guns were employed extensively for long-range barrages, many nations adopted boattail bullets, and this type of bullet also became popular for sporting use.



**Bolt sleeve (bolt plug)** — Multiple-purpose component of Mauser, Krag, and a number of other bolt-action rifles. It is fastened to the rear of the bolt with threads or lugs, and closes the rear of the bolt, guides cocking piece and firing pin, is a seat for the firing pin spring, and has a shoulder which stops forward motion of the assembled cocking piece and firing pin. In many rifles it also holds the safety lock. The bolt sleeve of Mauser Model 98 and several Mauser-type rifles is equipped with a bolt sleeve lock and spring, and the bolt sleeve of Krag rifles holds the extractor.



# Colt Gold Cup National Match Mark III Pistol

By JAMES M. TRIGGS



**T**HE Colt Gold Cup National Match Mark III cal. .38 Special semi-automatic pistol was introduced in 1962.

The Gold Cup model was first offered in 1961. Changes in the barrel specifications were made shortly thereafter. After limited production of the modified pistol, Colt's completely redesigned the pistol and designated it Mark III.

The rifling specifications of the barrel were changed to give a nominal bore diameter of .347", with groove diameter of .357". Barrel chamber diameter was reduced .002" and the chamber wall was threaded to increase friction between the cartridge case and chamber walls as a result of the outward pressure from the expanding powder gases. This holds the barrel and slide together until the bullet has cleared the barrel and the pressure drops. The forcing cone, or bullet seat between chamber mouth and origin of the rifling, is much shorter in the Mark III barrel than in barrels of the previous models. The barrel bushing fits the frame tightly and the barrel is ground at the muzzle to give minimum play between slide and bushing when slide is in battery.

A depressor and depressor spring act on the sear to prevent follow-through of the hammer as the slide goes forward into battery.

The Mark III pistol is regularly furnished with Colt Accro fully-adjustable rear sight and 1/8" Patridge front sight.

## Takedown Procedure

Press in magazine catch (4) at left side of receiver and drop magazine assembly (2) out butt of pistol. Draw slide to rear and check chamber to be sure pistol is unloaded. Pull trigger and let hammer down with thumb. Press inward on knurled end of recoil spring plug (42) and turn barrel bushing approximately 1/4-turn clockwise. (Due to close fit of bushing to slide, a wrench fitted to bushing should be employed to loosen it.) Remove plug (42) and recoil spring (43) from front of slide. Rotate barrel bushing counterclockwise until it disengages from slide and remove to front.

Draw slide to rear until lug at rear end of slide stop (3) lines up with clearance cut on lower left hand edge of slide. Press in rounded end of slide stop pin which protrudes from right hand side of receiver.

Remove slide stop from left side of receiver. Pull slide forward off receiver and remove recoil spring guide (44). Remove barrel from front of slide, taking care not to lose barrel return spring (41).

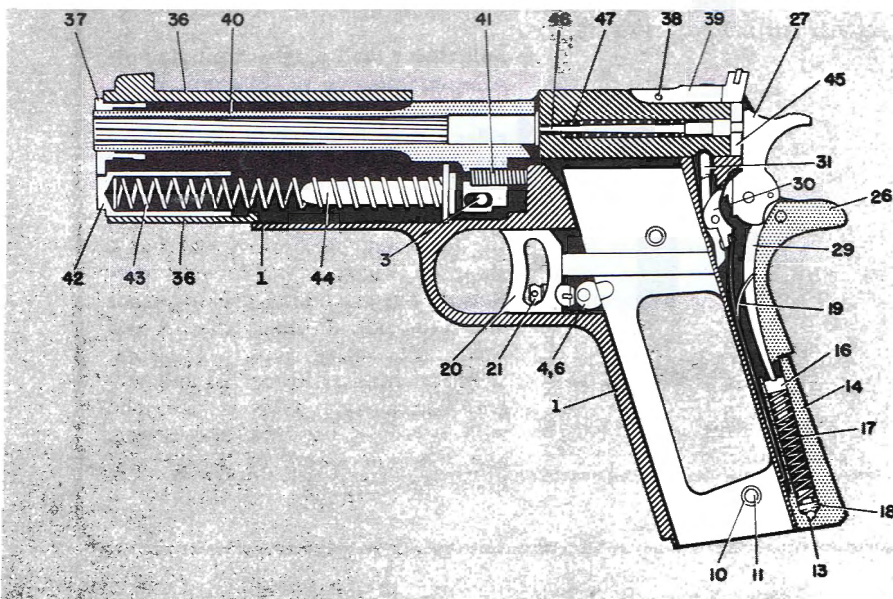
**Slide group.** Press in on rear end of firing pin (46) with a small punch until it clears firing pin stop (45). Remove firing pin stop from bottom of slide. Firing pin and firing pin spring (47) may be removed from rear of slide. Extractor (48) may be pried from rear of slide with small screwdriver. Removal of rear sight assembly (39) is accomplished by drifting out rear sight leaf pin (38). Detailed disassembly of rear sight is shown on following page. Reassemble in reverse.

Complete disassembly of rear sight assembly is not recommended except when necessary for repair.

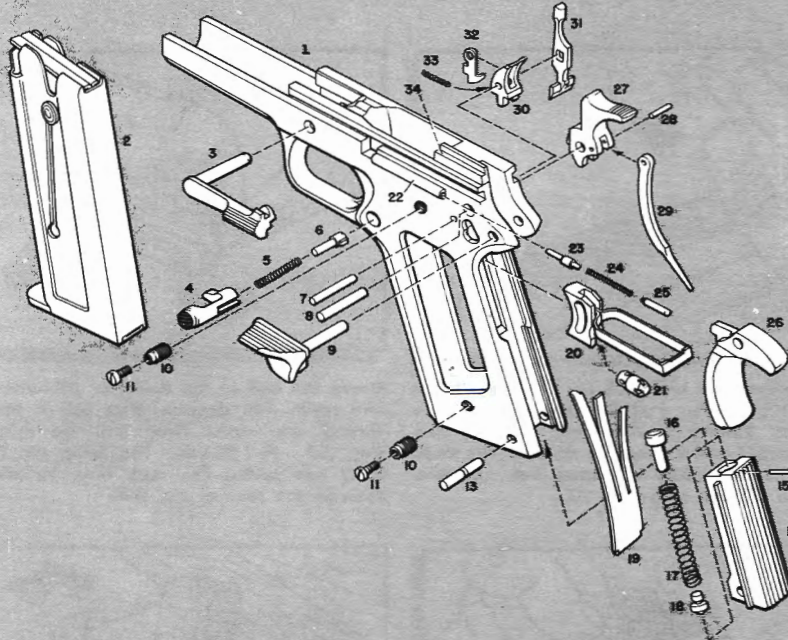
**Receiver group.** With hammer at full cock position, rotate safety lock (9) toward its "on" position until it can be pulled out of left side of receiver. Drift out hammer pin (8) and remove hammer (27) and hammer strut (29) from top rear of receiver. Hammer strut can be removed from hammer by drifting out hammer strut pin (28). Drift out mainspring housing pin (13) and slide mainspring housing (14) out of grooves at rear of receiver. Mainspring (17), mainspring cap (16), and mainspring housing pin retainer (18) are removed from housing after drifting out mainspring cap pin (15). Lift grip safety (26) out rear of receiver and remove sear spring (19) from rear of receiver. Drift out sear pin (7); drop sear (30) and disconnector (31) with depressor (32) and depressor spring (33) out of receiver. (See Fig. 2 for reassembly.)

Remove stock screws (11) and stocks (12—not shown in exploded drawing) from sides of receiver. Depress magazine catch (4) from left side of receiver and, using a small screwdriver, turn magazine catch lock (6) 1/4-turn counterclockwise from right side of receiver. Remove entire magazine catch assembly from right side of receiver (Note: magazine catch assembly parts are shown at left side of receiver in exploded drawing for clarity. They are assembled in the receiver from hole in right side.) Turn magazine catch lock (6) 1/4-turn clockwise to separate catch lock, spring (5), and catch (4). Remove trigger assembly (20) with trigger stop (21) from rear of receiver. Reassemble receiver group parts in reverse.

**1** Longitudinal section through the pistol showing the relationship of internal parts (magazine assembly is removed and an empty case is in chamber).







### PARTS, RECEIVER GROUP—

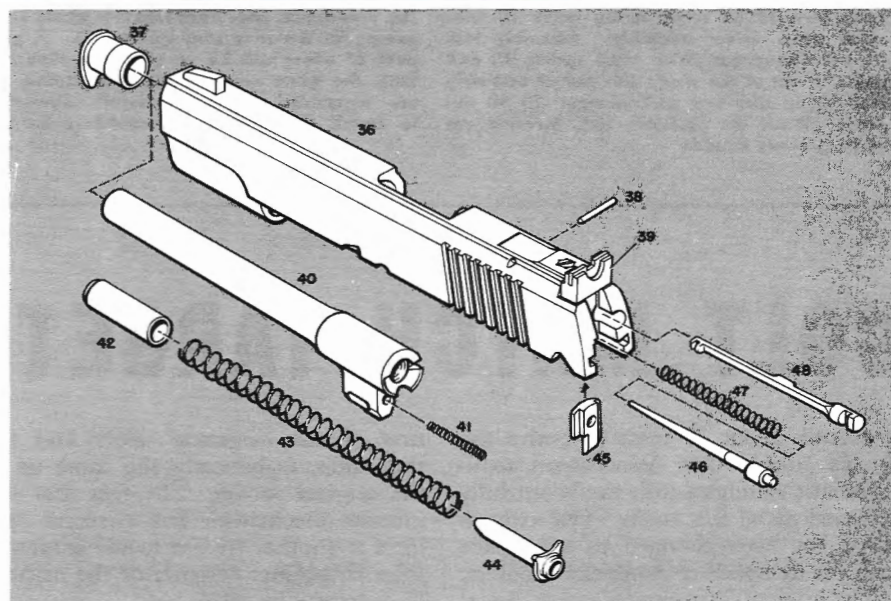
1. Receiver
2. Magazine assembly
3. Slide stop
4. Magazine catch

5. Magazine catch spring
6. Magazine catch lock
7. Sear pin
8. Hammer pin

9. Safety lock
10. Stock screw bushing (4)
11. Stock screw (4)
12. Stocks (2, not shown)
13. Mainspring housing pin
14. Mainspring housing
15. Mainspring cap pin
16. Mainspring cap
17. Mainspring
18. Mainspring housing pin retainer
19. Sear spring
20. Trigger assembly
21. Trigger stop
22. Plunger tube (shown assembled to receiver)
23. Slide stop plunger
24. Plunger spring
25. Safety lock plunger
26. Grip safety
27. Hammer
28. Hammer strut pin
29. Hammer strut
30. Sear
31. Disconnecter
32. Depressor
33. Depressor spring
34. Ejector (shown assembled to receiver)
35. Ejector pin (assembled to receiver, not visible in drawing)

2 The sear (30), disconnecter (31), depressor (32), and depressor spring (33) are shown below assembled in correct relationship. In the view to the left the disconnecter has been omitted for clarity. In the view to the right, sear, disconnecter, depressor, and depressor spring are shown assembled.

To facilitate reassembly of this assembly in receiver, it is suggested that a short slave pin (A) having a length equal to the width of the sear be employed to hold the parts together correctly. The slave pin will be drifted out when sear pin is replaced through frame.



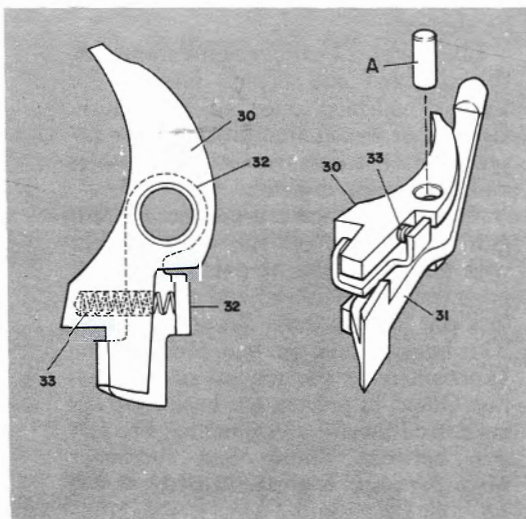
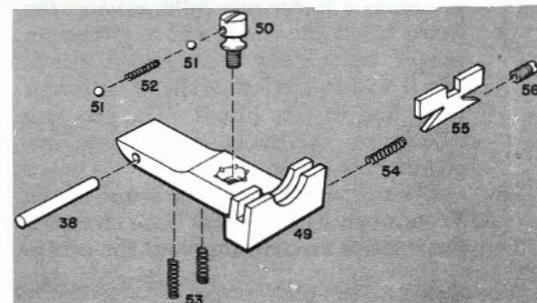
### PARTS, SLIDE GROUP—

36. Slide
37. Barrel bushing
38. Rear sight leaf pin
39. Rear sight assembly
40. Barrel
41. Barrel return spring

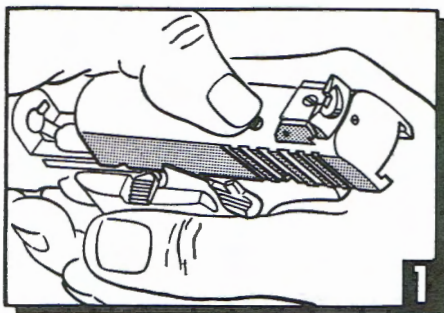
42. Recoil spring plug
43. Recoil spring
44. Recoil spring guide
45. Firing pin stop
46. Firing pin
47. Firing pin spring
48. Extractor

### PARTS, REAR SIGHT ASSEMBLY—

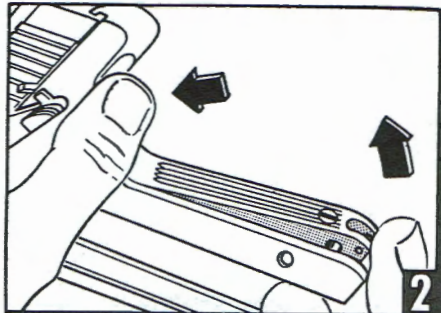
49. Rear sight leaf
50. Elevating screw
51. Detent balls (2)
52. Elevating screw detent spring
53. Elevating springs (2)
54. Windage spring
55. Rear sight blade
56. Windage screw



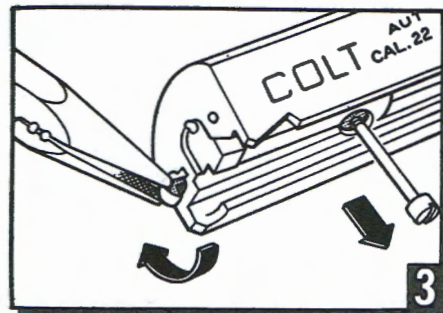




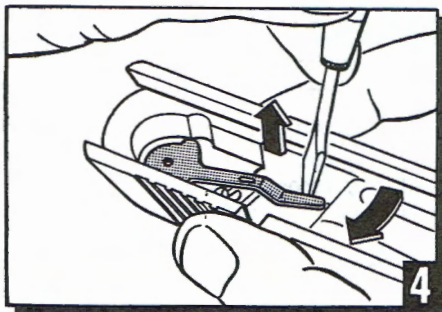
Check the magazine and chamber to be sure the gun is empty. Pull the slide back as far as it will go. Press down the assembly lock plunger (K), depress the slide stop (RR), and push the slide closed by hand, since the recoil spring is locked and cannot return the slide



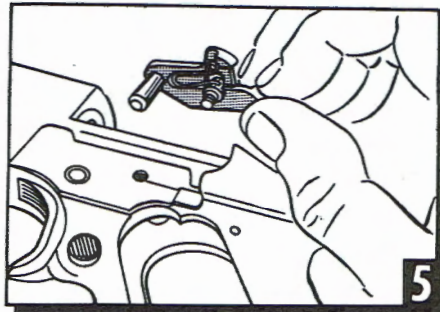
Remove the grips and push out the upper housing lock pin (PP). Pull the trigger to release hammer. Retract the slide about 1/8 inch, then press inward and upward as shown. The main spring housing (GG) will snap out. Remove the slide (P) and magazine (KK)



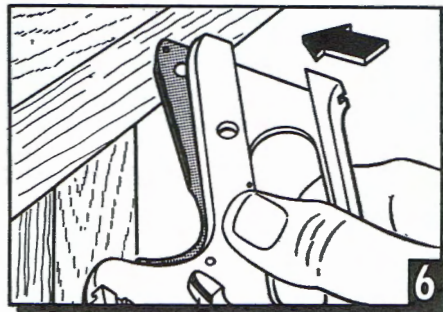
Grasp the end of the extractor (G) with pliers and rotate 180 degrees, then pull it forward. Thread grip screw (NN) into the firing pin stop (N). Pull it out. The firing pin (F), on firing pin spring (E), may then be removed through the rear of the slide



Press forward on recoil spring guide (I) with small screw driver assembly. Assembly lock (J) will disengage. Ease recoil spring (D) and guide (I) out of the slide. Lift end of assembly lock (J) up and turn lock plunger (K) 90 degrees. Work the assembly lock forward out of its grooves in slide



The Woodsman goes back together again easily except for the slide stop spring (TT). A great deal of effort will be saved if the slide stop (RR), the plate screw (QQ), and spring (TT) are assembled as shown before attempting to install them when re-assembling the gun



After all parts, with the exception of the housing (GG) and grips, have been reassembled into the slide (P) and receiver (WW), assemble the frame and receiver together, insert housing into the receiver, and press firmly against a table. The housing will snap into place

# COLT MATCH TARGET WOODSMAN

It took about 37 years to evolve the .22 caliber Colt Woodsman semi-automatic handgun into the beautifully designed pistol it is today. The exterior shape has been changed to keep pace with the demands of American shooters.

The original Woodsman target model suffered from a small grip and a light barrel. It was designed for low-velocity ammunition. Any Woodsman with a serial number under 83,790 should not be fired with high-speed ammunition until the main spring housing has been changed. An attempt was made in 1938 to obtain a better grip by extending the stocks below the frame and to give more weight by adding a slab-sided bevel. But it was in 1947 that the Woodsman really had its face lifted! The gun was redesigned externally and many improvements made.

Even though the outside shape of the Woodsman handgun has been changed, the interior mechanism, with the excep-

tion of the magazine safety and the slide stop, is basically the same as in the original model. The fact that the interior mechanism has changed very little is another tribute to the genius of John Browning, designer of the original Woodsman in 1915.

The Match Target Woodsman of today is made in .22 long rifle caliber only. Naturally, .22 shorts can be fired in it, but the shorts haven't enough power to operate the blow-back type of action used in the Woodsman. Made in two barrel lengths, 4 1/2 inch and 6 inch, the gun weighs 36 1/2 ounces and 41 ounces, respectively. The current Colt Match Target model, Woodsman target model, and sport models are equipped with a magazine safety and an automatic slide stop. The magazine safety prevents a lot of the "Oh, I didn't know it was loaded" type of accidents, for when the magazine is removed, even though there is a car-

tridge in the chamber, the gun cannot be fired. This type of safety would be a desirable feature in all non-military automatic pistols. These safety features plus the fine balance, sights, and above all the flawless finish, leaves little to be desired.

Like other .22 caliber semiautomatics, the chamber and breech face of the Colt Woodsman must be kept clean. Greased or waxed ammunition leave deposits that cause extraction troubles and, at times, misfires.

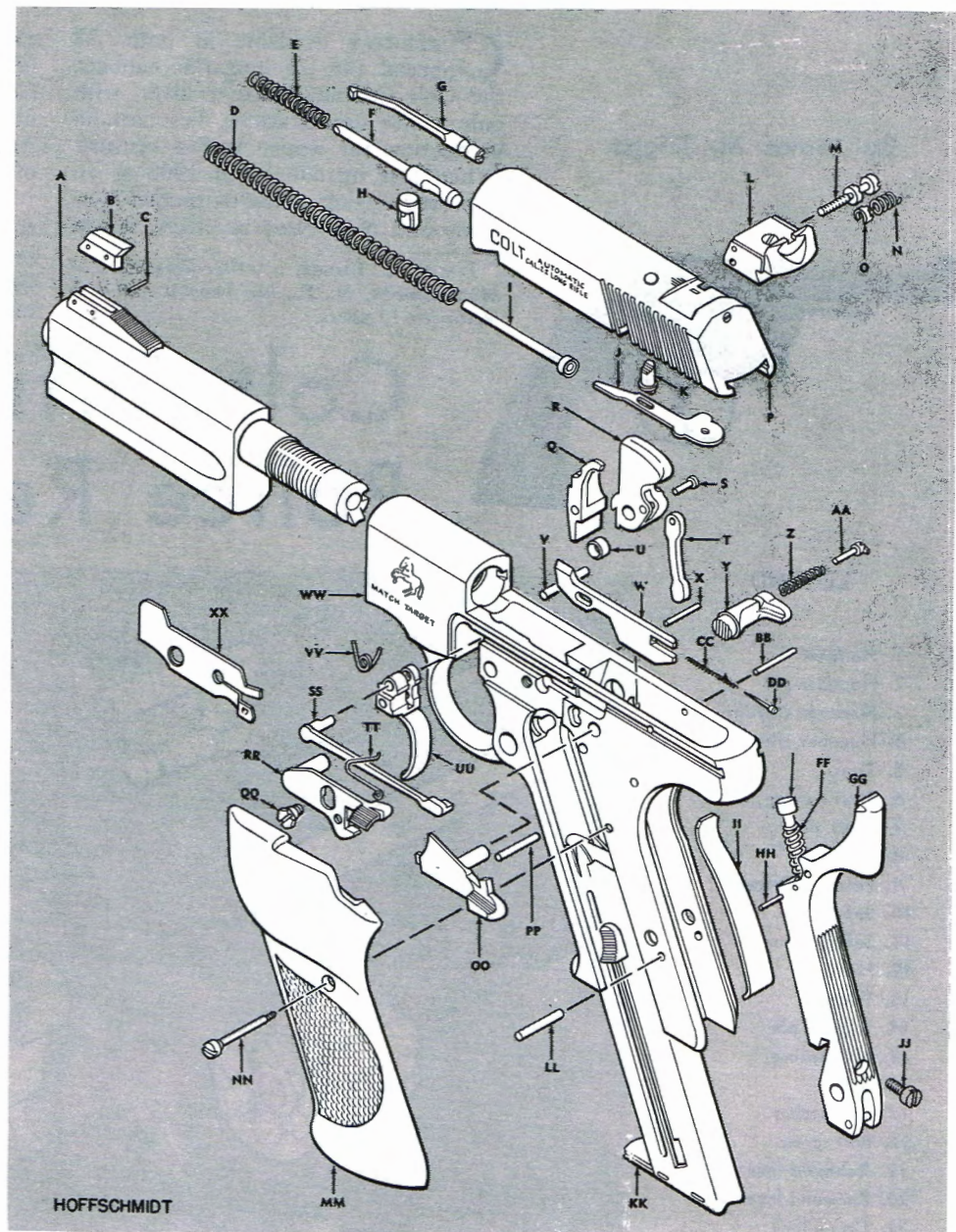
The field stripping procedure for this gun is the same as the early models, with the exception of one point. The grips must be removed and the housing lock pin (LL) pushed out of the frame. This housing lock pin was added to the Woodsman, at the request of the Marine Corps, to prevent the back strap being forced inward and pinching the soft skin between thumb and forefinger when the pistol is gripped tightly. ♦♦♦



## Legend

- |                               |                           |
|-------------------------------|---------------------------|
| A—Barrel                      | AA—Magazine catch lock    |
| B—Front sight blade           | BB—Ejector pin            |
| C—Sight blade pin             | CC—Ejector spring         |
| D—Recoil spring               | DD—Ejector plunger        |
| E—Firing pin spring           | EE—Main spring cap        |
| F—Firing pin                  | FF—Main spring            |
| G—Extractor                   | GG—Main spring housing    |
| H—Firing pin stop             | HH—Main spring cap pin    |
| I—Recoil spring guide         | II—Sear spring            |
| J—Assembly lock               | JJ—Grip adapter screw     |
| K—Assembly lock plunger       | KK—Magazine               |
| L—Rear sight                  | LL—Housing lock pin       |
| M—Sight windage screw         | MM—Left hand grip         |
| N—Windage screw detent spring | NN—Grip screw             |
| O—Windage detent              | OO—Safety catch           |
| P—Slide                       | PP—Upper housing lock pin |
| Q—Sear                        | QQ—Side plate screw       |
| R—Hammer                      | RR—Slide stop             |
| S—Hammer strut pin            | SS—Trigger bar            |
| T—Hammer strut                | TT—Slide stop spring      |
| U—Bushing                     | UU—Trigger                |
| V—Trigger pin                 | VV—Trigger spring         |
| W—Ejector                     | WW—Frame (receiver)       |
| X—Ejector pin                 | XX—Side plate             |
| Y—Magazine catch              |                           |
| Z—Magazine catch spring       |                           |

NOTE: Models produced subsequently to 1955 do not have magazine safety.



By E. J. Hoffschmidt



By James M. Triggs



CURRENTLY available in both .38 Special and .22 long rifle calibers, the Colt Official Police revolver, with only minor modifications, has been in production for nearly half a century. When first introduced in 1908 as an improved version of the outmoded New Army and New Navy revolvers, it was

JAMES M. TRIGGS, a writer-illustrator of Mamaroneck, N. Y., has been a gun collector for 15 years.

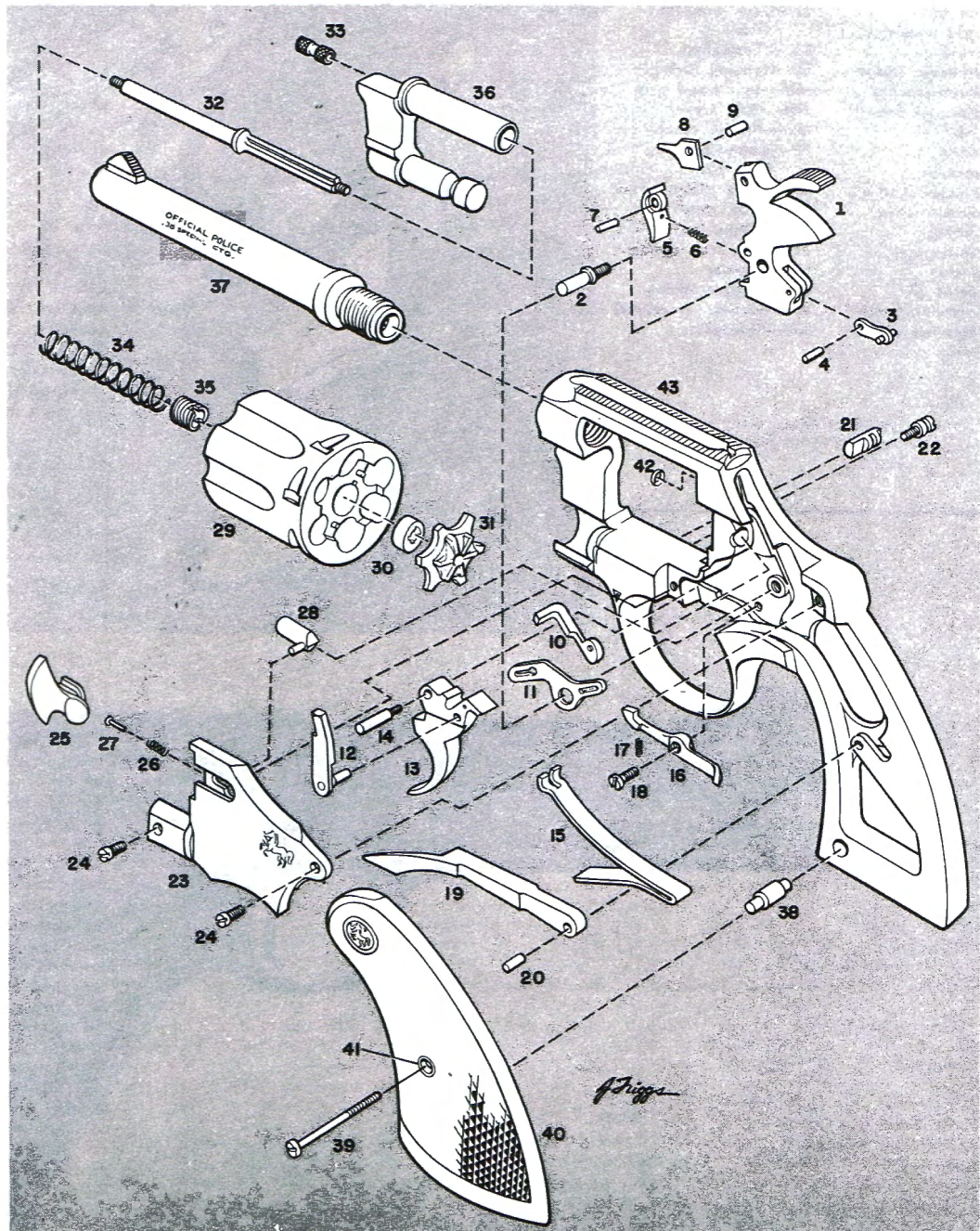
called the Colt Army Special, and offered in .32-20, .38 Special, and .41 Colt calibers. At that time it failed of adoption as a service arm since the Army was not interested in handguns of less than .45 caliber.

Thus, it was as a police sidearm that the Army Special earned its well-deserved reputation for accuracy and reliability. By 1928 it was used by so many law enforcement agencies that it

# Colt Official Police Revolver

## LEGEND

1. Hammer
2. Hammer pin
3. Hammer stirrup
4. Hammer stirrup pin
5. Strut
6. Strut spring
7. Strut pin
8. Firing pin
9. Firing pin rivet
10. Safety
11. Safety lever
12. Hand
13. Trigger
14. Trigger pin
15. Mainspring
16. Bolt
17. Bolt spring
18. Bolt screw
19. Rebound lever
20. Rebound lever pin
21. Crane lock
22. Crane lock screw
23. Sideplate
24. Sideplate screws (2)
25. Latch
26. Latch spring
27. Latch spring guide
28. Latch pin
29. Cylinder
30. Cylinder bushing
31. Ejector and ratchet
32. Ejector rod
33. Ejector rod head
34. Ejector spring
35. Crane bushing
36. Crane
37. Barrel
38. Stock pin
39. Stock screw
40. Stocks (2)
41. Escutcheons (2)
42. Recoil Plate
43. Frame





was renamed the Official Police model.

In 1930 the Official Police model was first offered in .22 long rifle caliber. The .32-20 and .41 Colt chamberings were discontinued in 1935. It is interesting to note that a very few of the Army Special revolvers were experimentally chambered for the .25-20 WCF cartridge.

During the course of manufacture stock material varied from the original

black hard rubber to checked walnut then to reddish brown Colt-made plastic. Walnut is now being used.

During World War II the Colt firm produced a somewhat roughly finished version of the Official Police revolver for use by defense plant guards and other emergency law enforcement officers. Known as the Commando model, it was discontinued after World War II.

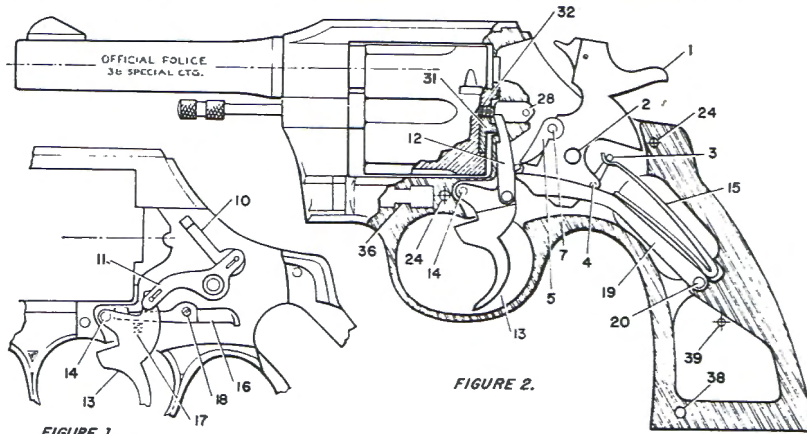


FIGURE 2.

FIGURE 1.

#### DISASSEMBLY AND ASSEMBLY PROCEDURE

Remove crane lock screw (22) and crane lock (21). Swing out cylinder and remove cylinder and crane assembly by pushing to the front. Disassembly of the cylinder and crane assembly should be undertaken only by a competent gunsmith.

Remove stock screw (39) and stocks (40). Remove sideplate screws (24). Do not attempt to pry out the sideplate (23) but tap the frame and sideplate with the wooden handle of a tool until the plate loosens and can be lifted out. Remove the latch (25) and latch spring and guide (26 and 27) from the sideplate.

To remove the mainspring (15), lay the pistol flat and push the hammer back about 1/4" with the left forefinger. Holding a screwdriver in the right hand, press down on the mainspring near the stirrup (3) with the flat tip of the screwdriver. Push the hammer forward to disengage the stirrup from the mainspring and lift out the mainspring with the fingers.

Remove hand (12) from trigger (13). Drive out the rebound lever pin (20) with a punch or drift pin and remove the rebound lever (19). Remove the trigger by lifting it up off the trigger pin (14). Draw the hammer (1) to its rearmost position and lift it up off the hammer pin (2). Drive out the strut pin (7) from the hammer with a small punch and remove the strut (5) and strut spring (6). Drive out the hammer stirrup pin (4) and remove the hammer stirrup (3).

Remove the safety lever (11) from its pivot around the base of the hammer pin (2) and remove the safety (10) from its slot in the frame. Remove the bolt screw (18) and remove the bolt (16), using care not to lose the bolt spring (17). The latch pin (28) can be dropped out of its hole in the frame.

Removal of the barrel, firing pin, recoil

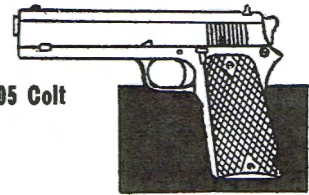
plate, stock pin, trigger pin, or hammer pin should be attempted only by an experienced gunsmith.

The revolver is reassembled in the reverse order. The safety lever (11) should be placed back on its pivot with the slot in its short end engaging the stud on the safety (10). Replace the trigger so that the stud on the right side of the trigger engages the slot on the longer end of the safety lever. This assembly should be tested by moving the trigger back and forth to determine if the safety and safety lever are operating smoothly with the trigger in all the way forward. The proper relationship of the safety, safety lever, trigger, and bolt are shown in Fig. 1.

To replace the mainspring (15), grasp the spring between thumb and forefinger of the right hand and slide the slotted end of the spring into position with the hammer stirrup (3), guiding the stirrup into position by moving the hammer on its pin with the forefinger of the left hand. When the stirrup and mainspring have been engaged, lift the bottom of the spring onto the rebound lever (19) with thumb of right hand. Replace hand (12) in its hole in the trigger and press upward on the rebound lever (19) to allow the hand to be fully seated. The sectionalized diagrammatic view in Fig. 2 shows these parts in their proper relationship.

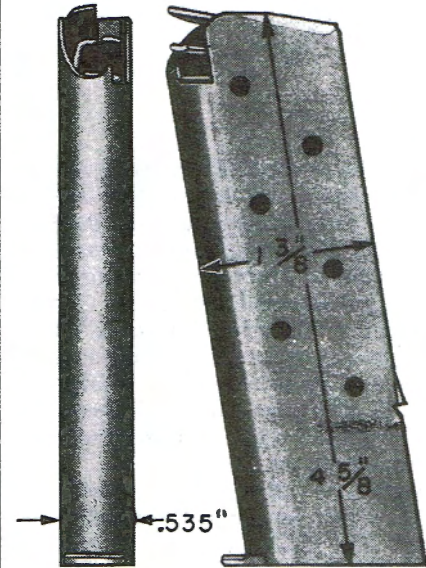
Replace the latch spring and guide (26 and 27) in sideplate (23) and place sideplate in position on frame but do not seat fully. Place the latch (25) in its slot in the sideplate so that the stud on the latch pin (28) engages the hole in the latch. Seat the sideplate tightly and replace the screws (24). Replacing cylinder and crane assembly and the stocks completes the reassembly.

Model 1905 Colt

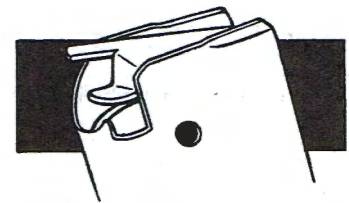


## PISTOL MAGAZINES

One of a series



The Model 1905 Colt Automatic pistol was the forerunner of the world famous Models 1911 and 1911A1 U. S. Service pistols. It is the most common automatic pistol of the series of semi-experimental versions that led up to the Model 1911. While the Model 1905 is an effective weapon, it is primarily a collector item today. Except for a few details, the magazines look like Model 1911 magazines. Model 1905 magazines have 6 holes per side instead of the 5 found in the Model 1911.



Model 1905 magazines can be recognized by the extra horn-like projection in the front notch instead of the smooth line found on Model 1911 magazine.



Other points of identification are the retainer protrusion and cut on the back strap.—E. J. HOFFSCHMIDT



# Colt Paterson Revolver

By Thomas E. Wessel



IN 1836, under authority of a charter granted by the State of New Jersey, a group of financiers organized the Patent Arms Manufacturing Co. Their aim was to manufacture percussion firearms under patents held by Samuel Colt, a young inventor from Hartford, Conn. The factory was set up in Paterson, N. J., and the president of the firm was Elias B. D. Ogden. Dudley Selden, cousin of Samuel Colt, was secretary and general manager.

Very few arms were produced in 1836 except for limited production of rifles. The first Government trial of rifles was held in 1837, but report of the board was unfavorable. In 1838, however, Colt did succeed in selling 125 rifles to the Government for use in the Seminole War. Some revolvers were

also purchased by officers engaged in that war.

An additional military order for carbines and revolvers was obtained from the Republic of Texas in 1839.

During this time Colt did everything possible to promote sale of his arms, including presentation of a revolver to President Andrew Jackson. Some of his promotional efforts must have been considered unorthodox by his conservative cousin Dudley Selden, as friction between these 2 eventually caused Selden to resign, and John Ehlers then took over the duties of secretary and general manager.

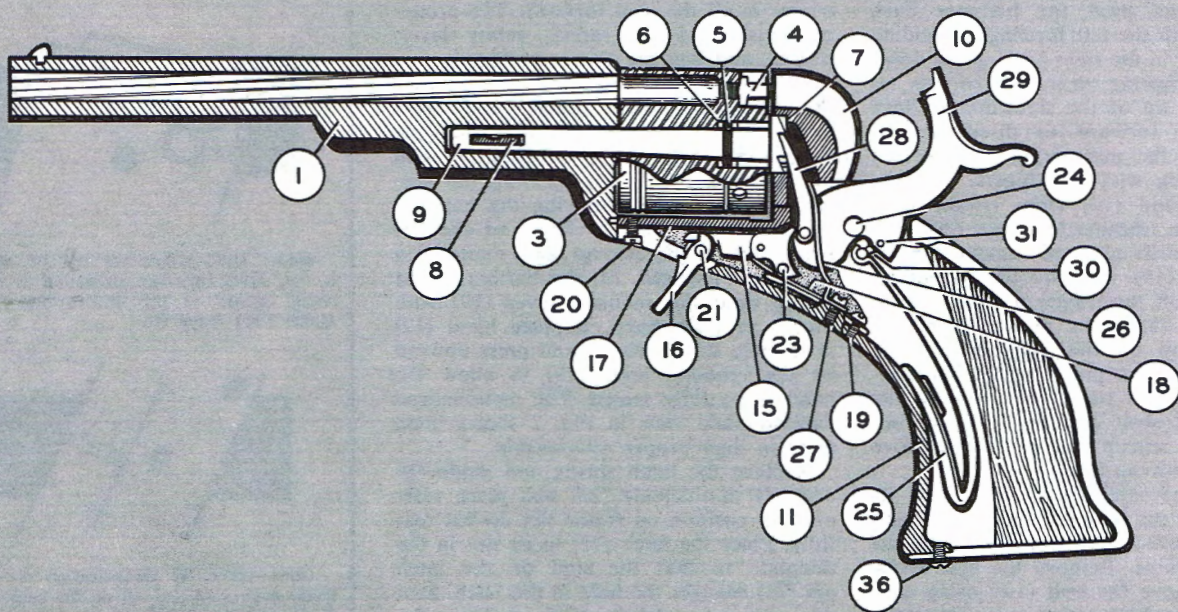
In 1841, Colt became dissatisfied with distribution of royalty payments by Ehlers, and began legal action which in 1842 resulted in bankruptcy of the

firm. An order from U. S. Ordnance in 1841 for 160 repeating carbines was received too late to stave off the bankruptcy proceedings. Luckily for Colt, he retained ownership of his patents.

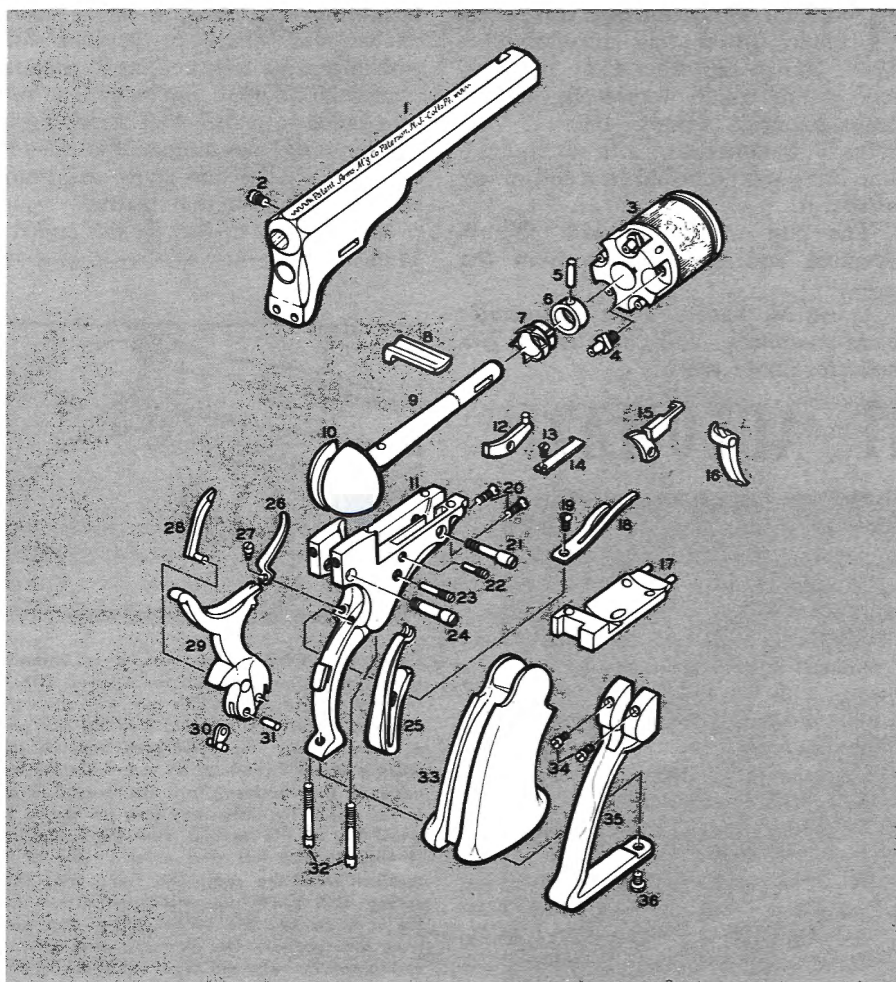
A variety of Paterson revolvers and long arms was produced by this relatively short-lived firm. Revolvers were made in calcs. .28, .31, .34, and .36, in pocket, belt, and holster styles. Long arms made included shotguns, as well as carbines and rifles.

Early Paterson arms lacked loading levers, but this feature appeared some time in 1840.

Paterson arms, and especially revolvers, are much sought after by present-day collectors. Heavy demand, coupled with their rarity, ranks them among the most valuable antique arms.







### Parts Legend

- |                                 |                                       |
|---------------------------------|---------------------------------------|
| 1. Barrel                       | 19. Bolt and trigger spring screw     |
| 2. Wedge screw                  | 20. Frame plate screw (2)             |
| 3. Cylinder                     | 21. Trigger screw                     |
| 4. Nipple (5)                   | 22. Bolt screw                        |
| 5. Ratchet-retaining collar pin | 23. Actuating bar screw               |
| 6. Ratchet-retaining collar     | 24. Hammer screw                      |
| 7. Ratchet                      | 25. Mainspring                        |
| 8. Wedge                        | 26. Hand spring                       |
| 9. Cylinder arbor               | 27. Hand spring screw                 |
| 10. Recoil shield               | 28. Hand                              |
| 11. Frame                       | 29. Hammer                            |
| 12. Bolt                        | 30. Stirrup                           |
| 13. Upper trigger spring screw  | 31. Stirrup pin                       |
| 14. Upper trigger spring        | 32. Recoil shield retaining screw (2) |
| 15. Trigger actuating bar       | 33. Grip                              |
| 16. Trigger                     | 34. Backstrap screw (2)               |
| 17. Frame plate                 | 35. Backstrap                         |
| 18. Bolt and trigger spring     | 36. Butt screw                        |

### Disassembly Procedure

Remove wedge screw (2) and tap out wedge (8) from right side using a plastic or rubber hammer. Remove barrel (1) and cylinder (3). Next, remove frame plate screws (20) and lift away frame plate (17). Remove butt screw (36) and backstrap screws (34). Lift away backstrap (35) and grip (33), which may then be separated. All internal working parts are exposed at this point.

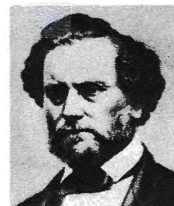
Should further disassembly be required, continue by removing hand spring screw (27) and hand spring (26). With the left hand, compress mainspring (25) slightly

to relieve tension on stirrup (30) and hammer (29), and remove hammer screw (24) and hammer together with hand (28). Remove bolt and trigger spring screw (19) and spring (18), then remove trigger screw (21), bolt screw (22), and actuating bar screw (23). Remove trigger (16), actuating bar (15), and bolt (12). Removal of the upper trigger spring screw (13) permits removal of the upper trigger spring (14). Drifting out of the ratchet-retaining collar pin (5) permits removal of the ratchet-retaining collar (6) and ratchet (7). Reassemble Colt Paterson in reverse order. ■

## A MAN TO REMEMBER

### SAMUEL COLT

*Produced the first practical revolver*



BORN July 19, 1814, in Hartford, Conn., the son of Christopher Colt, a manufacturer of cottons and woollens, Samuel Colt's boyhood was characterized by financial struggle and family insecurity. When he was 7 years old, his mother died, and his father's business failed. Being thus deprived of a settled home life, he spent the next few years in a number of places and occupations. He was apprenticed at 10 to a bleacher and dyer. He worked as a farm laborer, and in between he attended various schools until his natural mischievousness caused him to be removed from a preparatory school at Amherst when he was 16. His academic career ended, Colt signed on as a seaman for a voyage to India, and it was on the return trip in 1830 that he whittled out the first model of his design for a new revolving firearm.

Upon his return from the sea, Colt set out to perfect and patent his invention, supporting himself among other ways with lectures on chemistry and practical demonstrations of laughing gas. In 1831 he set a gunsmith to work on his first models; and during 1833-35 he produced several pistols and rifles in Baltimore. British and French patents were granted in 1835, and he obtained his first U. S. patent in 1836. Shortly thereafter he opened his first factory in Paterson, N. J., but failure to obtain large orders brought on bankruptcy. Finally in 1847, an Army order for the famous Walker revolver put Colt back in business, first at Whitneyville and then in Hartford. The business expanded rapidly as Colt perfected his gun and added new models. The revolver, and Colt with it, were a success.

Colt's great contribution to the development of firearms was the production of the first practical revolving cylinder firearm, embodying as its leading feature the automatic rotation of the cylinder in cocking by a pawl on the hammer engaging a ratchet on the end of the cylinder.

Colt died Jan. 10, 1862.—HAROLD L. PETERSON



By James M. Triggs

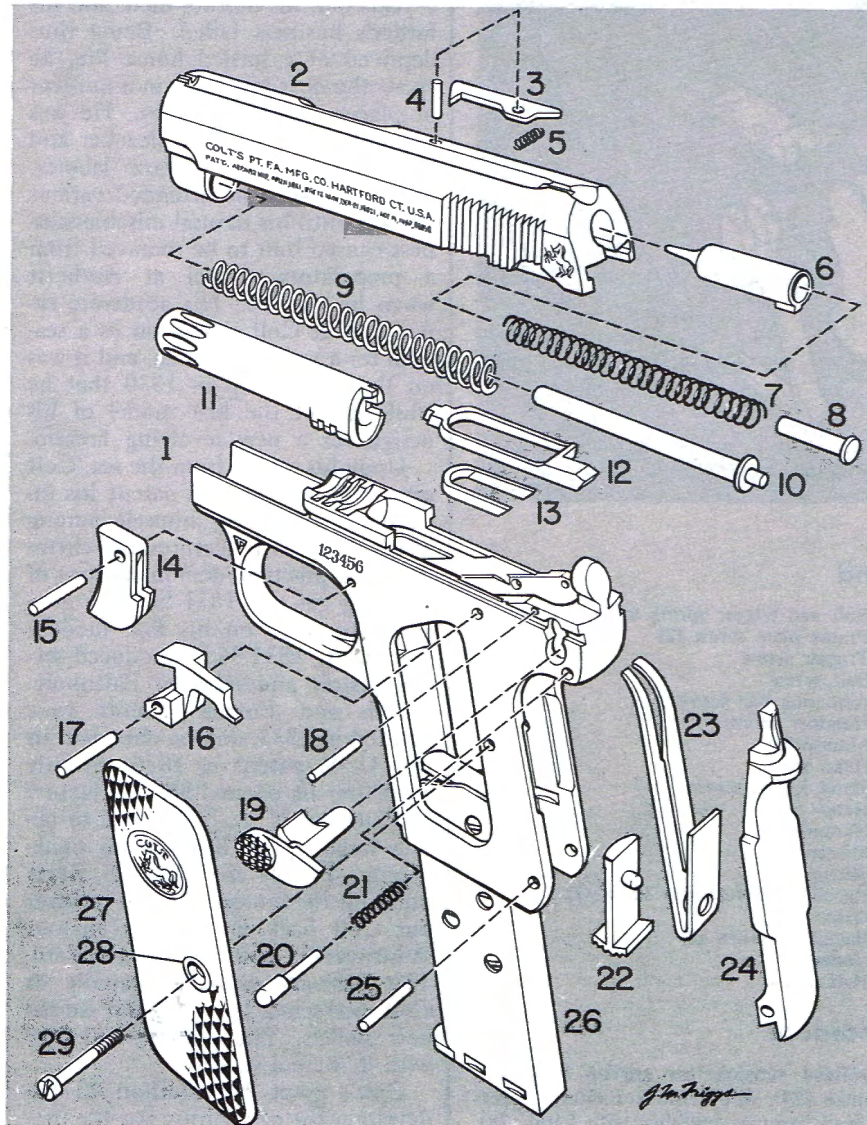


THE Colt .25 hammerless vest-pocket model pistol was introduced in 1908. Unlike the other Colt 'hammerless' pistols which were really of concealed-hammer design, the .25 was actually hammerless, with a straight-line firing pin propelled by a coil spring behind it.

The gun was made with thumb-operated and grip safeties from the

JAMES M. TRIGGS, a writer-illustrator of Mamaroneck, N. Y., has been a gun collector for 15 years.

## COLT .25 POCKET AUTOMATIC

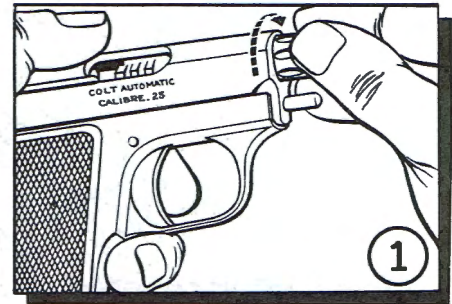


### LEGEND

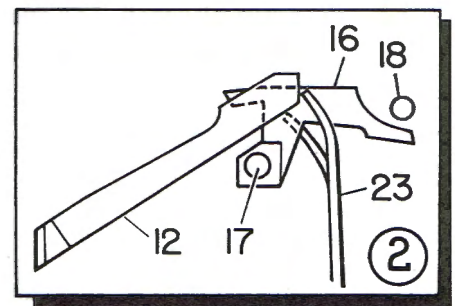
- |                     |                              |                                      |
|---------------------|------------------------------|--------------------------------------|
| 1. Receiver         | 10. Recoil Spring Guide      | 20. Slide Lock Safety Plunger        |
| 2. Slide            | 11. Barrel                   | 21. Slide Lock Safety Plunger Spring |
| 3. Extractor        | 12. Connector                | 22. Magazine Catch                   |
| 4. Extractor Pin    | 13. Depressor                | 23. Sear Spring                      |
| 5. Extractor Spring | 14. Trigger                  | 24. Grip Safety                      |
| 6. Firing Pin       | 15. Trigger Pin              | 25. Grip Safety Pin                  |
| 7. Mainspring       | 16. Sear                     | 26. Magazine                         |
| 8. Mainspring Guide | 17. Sear and Grip Safety Pin | 27. Stocks (2)                       |
| 9. Recoil Spring    | 18. Sear Stop Pin            | 28. Escutcheons (2)                  |
|                     | 19. Slide Lock Safety        | 29. Stock Screw                      |

beginning. In 1917, a safety disconnect was added to prevent firing with magazine removed, as a safeguard against accidental discharge by users who failed to realize that removing the magazine did not unload the chamber of the gun. All pistols above serial number 141,000 have that feature.

Manufacture of the .25 was ended in 1946.



Check the pistol to be sure it is unloaded. Insert magazine and pull the trigger. (Do not attempt to disassemble this gun with the action cocked!) Remove magazine. Holding the pistol as shown, draw the slide back until its front edge is about 1/16th of an inch from the front edge of the receiver. Turn the barrel 1/4 turn to the right. The slide may now be drawn forward and off the receiver. Turn the barrel back 1/4 turn to the left and drop it out of the receiver from the rear. The firing pin, main spring, and guide are easily withdrawn from the slide as are the recoil spring and guide from the receiver. The extractor and extractor spring can be removed from the slide by drifting out their retaining pin.



Remove the stocks. Drift out the grip safety pin (25) and remove the grip safety (24) from the receiver. Remove the sear spring (23). Note that the short leaf of the sear spring faces toward the rear of the pistol. Remove the magazine catch (22). Turn the slide lock safety (19) to the "up" position and withdraw it from the receiver. Remove the slide lock safety plunger and spring (20 and 21) from their hole beneath the slide lock safety. Drift out the sear and grip safety pin (17) and remove the sear through the bottom of the receiver behind the magazine well. Normally there is no need to withdraw the sear stop pin (18). The trigger may be withdrawn by drifting out its retaining pin (15). Withdraw the connector (12) from its grooves in the receiver. The depressor (13) is not normally removed but can be withdrawn toward the rear through the connector grooves. Reassemble in reverse order taking care that the sear, connector, sear spring, and sear stop pin are in the proper relationship as shown by the diagram.





# COLT

## SINGLE ACTION

### ARMY REVOLVER

By James M. Triggs

**A** MILITARY weapon extracting the discharged shells singly; combining strength and simplicity of action; not liable to get out of order; readily taken apart and easily cleaned; having entire exchangeability of parts, with a high order of finish. Commended for durability and actual service in the hands of a soldier. . . ."

The above succinct report, by the judges of the Centennial Exposition held in Philadelphia in 1876, is as relevant today as it was over 80 years ago. It is a striking fact indeed that the revolver referred to remains in production as of this date. As such, it can claim the longest production period of any revolver, if not any cartridge firearm, ever commercially produced. Introduced in 1873 as the Single Action Army, it is also known as the Single Action Army and Frontier, Frontier Six-Shooter, Peacemaker, and Model 'P'.

It enjoyed continuous production from 1873 until 1941 when reduced sales and pressure of defense contracts terminated its manufacture. After World War II the demand for Colt Single Action revolvers skyrocketed to the point where collectors often paid from three to four times the pre-war price. In light of this strong demand, Colt's in 1955 decided to resume limited production. Specifications remained unchanged although calibers were restricted to .38 S&W Special and the traditional .45 Colt. Recently Colt's also resumed production of the unique Buntline Special version of the Single Action Army which features a barrel 12 inches long!

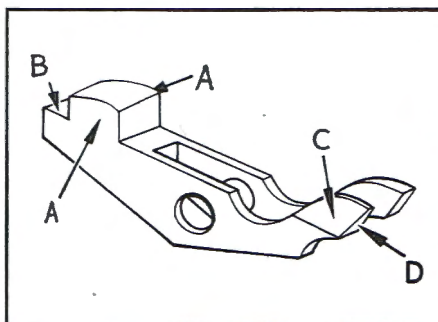
It is perhaps significant that only minor design changes have been effected during the years that the Colt Single Action has been produced. Early guns with serial numbers below 165,000 are

JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.

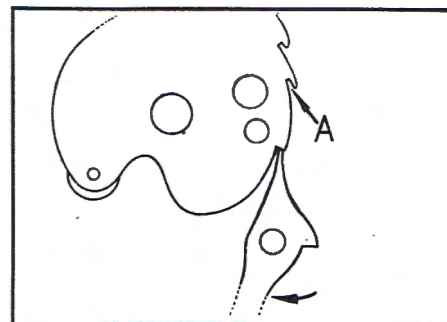
in the so-called blackpowder category, whereas those with higher numbers were manufactured after the advent of smokeless powder. The change-over, which occurred in 1896, was reflected in reduced headspace tolerances to accommodate the higher pressures developed by smokeless powder cartridges. The substitution of the spring release for the screw originally used to retain the base pin occurred about the same

time as the change to smokeless.

The barrels of early Single Action revolvers were rifled with comparatively narrow lands, whereas those made subsequently have wider lands with lands and grooves of equal width. Some were furnished smoothbored for use with shot cartridges. Barrel lengths varied from three inches up to 16 and 18 inches for the special-order Buntline models. Some guns were produced



**1** The parts most frequently requiring replacement in the Single Action are the hammer, trigger, and bolt which are subject to breakage. These replacement parts are usually a little oversized so careful fitting is in order. This drawing shows the steps necessary in installing a new bolt. First, file sides of bolt cylinder-engaging tip at "A", trying bolt tip in bolt recesses in cylinder until a close fit is achieved. Try fit again with bolt and cylinder installed in frame. Some additional fitting may now be necessary to allow bolt tip to pass smoothly through cut in frame. The height of engaging tip of bolt, as it rises up through frame to engage cylinder, can be controlled by filing forward lip of bolt at "B". Removing metal at this point will allow bolt to rise higher up out of frame. Use care in this operation since, if too much metal is removed, bolt may not lower far enough to allow cylinder to turn. File a bevel at the rear tip of the bolt as shown at "C" to allow this tip to slide smoothly over the bolt cam on the hammer. Timing of the bolt fall into its locking recess in the cylinder is determined at "D". If insufficient metal is removed at this point, the bolt will not fall; if too much is taken away, the bolt will fall too soon and a stripe around the cylinder will result



**2** Frequently the sear end of the trigger is broken off. This increases the sear thickness and, in effect, forms a wedge which will invariably break the loading notch (A) on the hammer if the trigger is not replaced. If the trigger is replaced after the loading notch is broken, it will be impossible to maintain a true edge on the sear with this rough area existing on the hammer. In this case hammer replacement is mandatory. First, determine that end of new sear will fit snugly into loading notch without any bind, and when installed in frame is not so high that it will not engage full-cock notch in hammer when hammer is pulled back to the cocked position. With end of sear at right height to engage hammer properly, stone proper angle on tip, then hone with Arkansas stone. This figure shows correct relationship of full-cock notch in hammer and sear end of trigger with hammer cocked. Note that angle on tip of sear and notch in hammer are parallel to direction of travel of sear tip when trigger is pulled. If angle is not parallel to this motion, it will result either in a hard trigger pull (because sear must lift hammer slightly to clear notch) or sear can easily slip off hammer notch, a dangerous condition



without ejector assemblies. From the collector standpoint, an almost endless number of variations is likely to be encountered, from the plain standard models to those elaborately engraved and ornamented to suit a king's taste. A collection by caliber alone would be imposing, considering that the Single

Action has been factory chambered for virtually every American rimfire and center-fire handgun cartridge of significance as well as English, German, and Russian service cartridges. Suffice to say that caliber variations range from the lowly .22 rimfire up to and including the enormous .476 Eley.

## Colt Single Action Army Revolver

### DISASSEMBLY PROCEDURE

Unload revolver. Remove cylinder (14) by opening loading gate (15) and withdrawing base pin (7) and, with hammer at half cock, press cylinder out of frame to right. The base pin is removed by pressing in base pin screw. On older models below serial number 165,000, base pin is held in place by base pin screw (7A) in front of frame; loosening this screw will free base pin.

Remove stocks (42). Remove backstrap (38) by unscrewing two upper backstrap screws (39) and front backstrap screw (35). Remove mainspring screw (36) and drop out mainspring (37). Remove front trigger guard screw (32) and two rear trigger guard screws (33) and lift trigger guard (31) from frame. Unscrew bolt spring screw (29) and remove sear and bolt spring (28) from underside of frame. Remove hammer screw (30) and trigger and bolt screws (26) and remove trigger (27), bolt (25), and hammer (16) with attached hand and spring (21) from inside of frame.

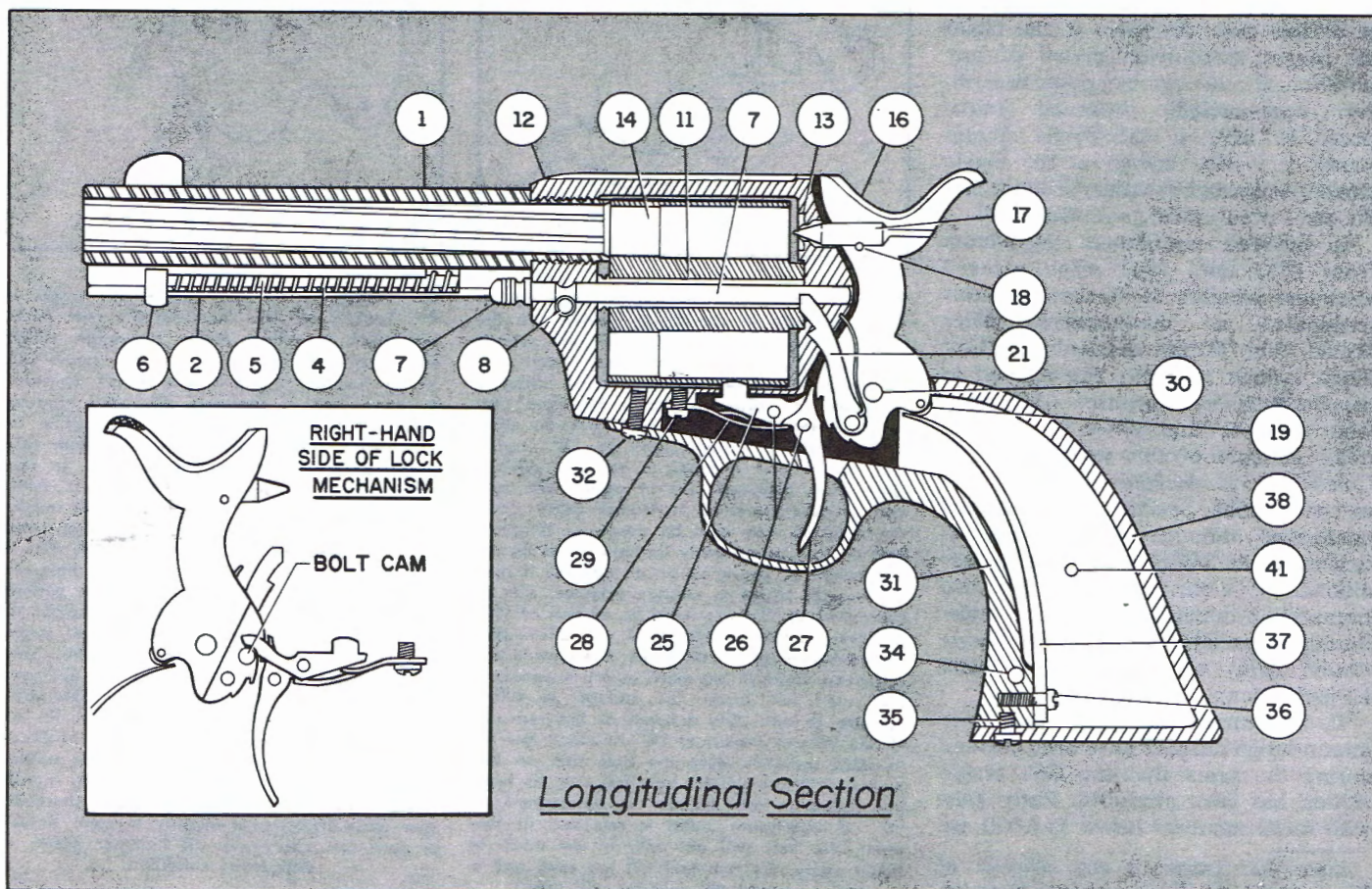
The loading gate (15) is removed by unscrewing gate catch screw (24) from its hole in underside of frame and dropping out gate spring (23) and gate catch (22). The base pin screw (8), base pin spring (9), and base pin nut (10) can be removed from frame by unscrewing screw from nut.

The ejector assembly is removed by unscrewing ejector tube screw (3) from barrel (1). Lift ejector tube (2) free of ejector stud in barrel and push tube toward front of gun, disengaging rear of tube from its seat in frame. The ejector rod (5) and ejector rod head (6) and ejector spring (4) may be withdrawn from ejector tube from rear.

This completes disassembly. Reassembly is accomplished in reverse order. Removal of barrel or replacement of either barrel or cylinder should only be attempted by an experienced person equipped with proper tools. The accompanying longitudinal section shows relationship of all parts with revolver assembled.

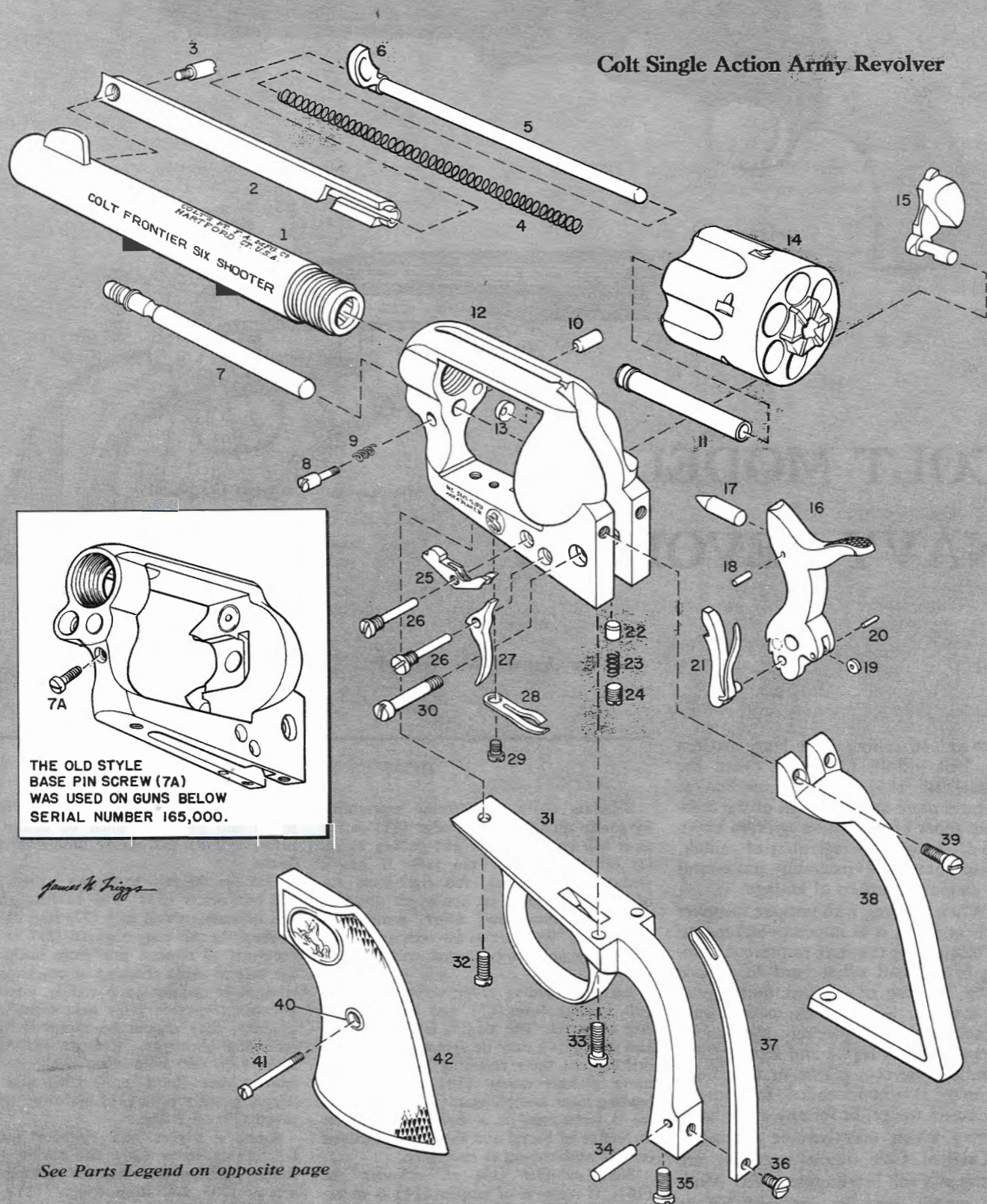
### PARTS LEGEND

1. Barrel
2. Ejector tube
3. Ejector tube screw
4. Ejector spring
5. Ejector rod
6. Ejector rod head
7. Base pin
- 7A. Base pin screw (old style)
8. Base pin screw
9. Base pin spring
10. Base pin nut
11. Base pin bushing
12. Frame
13. Recoil plate
14. Cylinder
15. Gate
16. Hammer
17. Firing pin
18. Firing pin rivet
19. Hammer roll
20. Hammer roll pin
21. Hand (with hand spring)
22. Gate catch
23. Gate spring
24. Gate catch screw
25. Bolt
26. Trigger & bolt screws
27. Trigger
28. Sear & bolt spring
29. Bolt spring screw
30. Hammer screw
31. Trigger guard
32. Front trigger guard screw
33. Rear trigger guard screws (2)
34. Stock pin
35. Front backstrap screw
36. Mainspring screw
37. Mainspring
38. Backstrap
39. Backstrap screws (2)
40. Escutcheons (2, left-hand only shown)
41. Stock screw
42. Stocks (left-hand only shown)

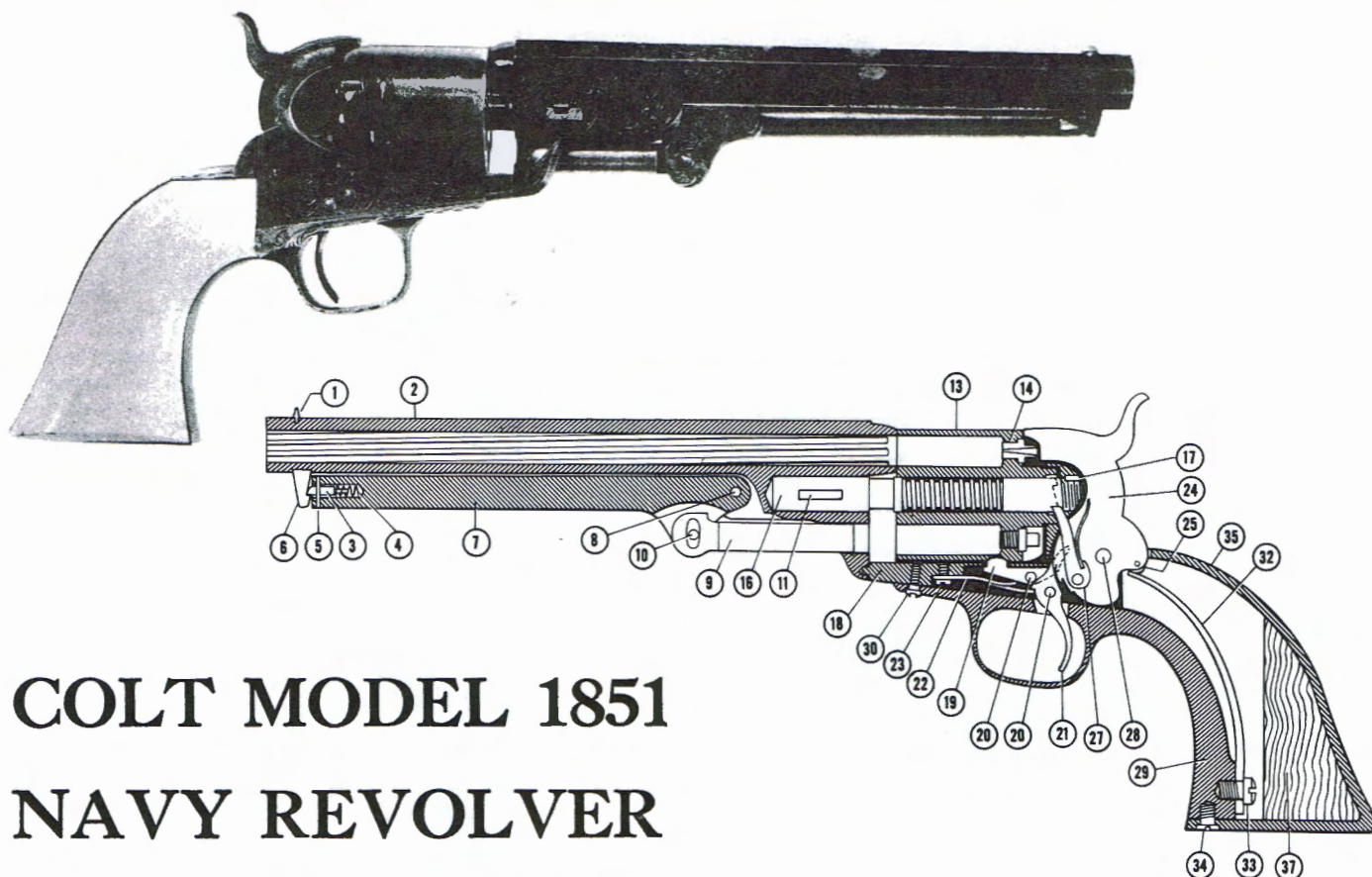




# Colt Single Action Army Revolver







# COLT MODEL 1851 NAVY REVOLVER

By James M. Triggs

**T**HE .36 caliber Colt Navy pattern belt pistols, frequently called the Model of 1851, present mechanical features more or less typical of the complete series of percussion ignition open-top Colt revolvers regardless of caliber. Disassembly and assembly procedures are similar regardless of vintage.

When working with antique revolvers such as these, it is imperative that care be taken from the start to prevent damage to old and often hard to replace parts. Marring of original finish must be avoided. Screwdrivers used should be selected to fit precisely the various screws in main frame and barrel. Likewise, the use of a plastic or fiber head hammer is recommended for driving the barrel wedge, or for any other hammering which may become necessary.

Original Colt nipple wrenches are brittle and will break quite easily. Modern nipple wrenches are available at little cost and will prove much more satisfactory for the removal of old nipples which often are rusted in place.

For normal cleaning purposes separation of barrel from frame and removal of cylinder will usually suffice.

## DISASSEMBLY PROCEDURE

Separate barrel and frame assemblies by gently driving barrel wedge (11) as far as it will go to the left and pulling barrel (2) off the cylinder pin (16). If barrel wedge has a spring, the right-hand lip of the spring must be depressed where it protrudes from barrel before wedge can be moved. Wedge can be removed completely by unscrewing barrel wedge screw (12).

Remove loading lever screw (8) and pull loading lever (7) and plunger (9) free of barrel. The loading lever latch (3) and spring (4) may be removed by gently drifting out their retaining pin (5). Remove plunger screw (10) and separate loading lever and plunger. The barrel stud (6) is force-fitted in a dovetail milled on underside of barrel and should be removed only if replacement is necessary.

Slide cylinder (13) off cylinder pin (16). If removal of nipples (14) is necessary for replacement, care should be taken that a proper nipple wrench is used.

Removal of cylinder pin (16) from lock frame (18) is not recommended. This cylinder pin, or arbor, was very tightly fitted originally and the firm association of pin and frame over the years is further complicated by a lock pin (17)

which is usually next to impossible to remove and generally must be drilled out, before cylinder pin can be unscrewed from frame.

Remove the two backstrap screws (36) and butt screw (34). Pull backstrap (35) and one-piece wood grip (37) free of lock frame (18) and trigger guard (29). If it is necessary to remove grip from backstrap, use care to avoid chipping or cracking grip since it is usually quite tightly fitted. If gun has two-piece grips held together by a screw, they should be removed before removing backstrap. Remove mainspring screw (33) and mainspring (32). Remove front trigger guard screw (30) and rear trigger guard screws (31) and drop trigger guard (29) off frame.

Remove trigger and cylinder locking bolt spring screw (23) and spring (22). Remove trigger and cylinder locking bolt screws (20) and drop trigger (21) and cylinder locking bolt (19) out of frame. Remove hammer screw (28) and pull hammer (24) and hand and spring (27) gently out bottom of frame. The hand can be lifted out of its hole in the hammer. If replacement is necessary, hammer roll (25) can be removed by gently drifting out its retaining pin (26).



## A MAN TO REMEMBER

ELI WHITNEY

*Applied the principle of interchangeable parts to the firearms industry*

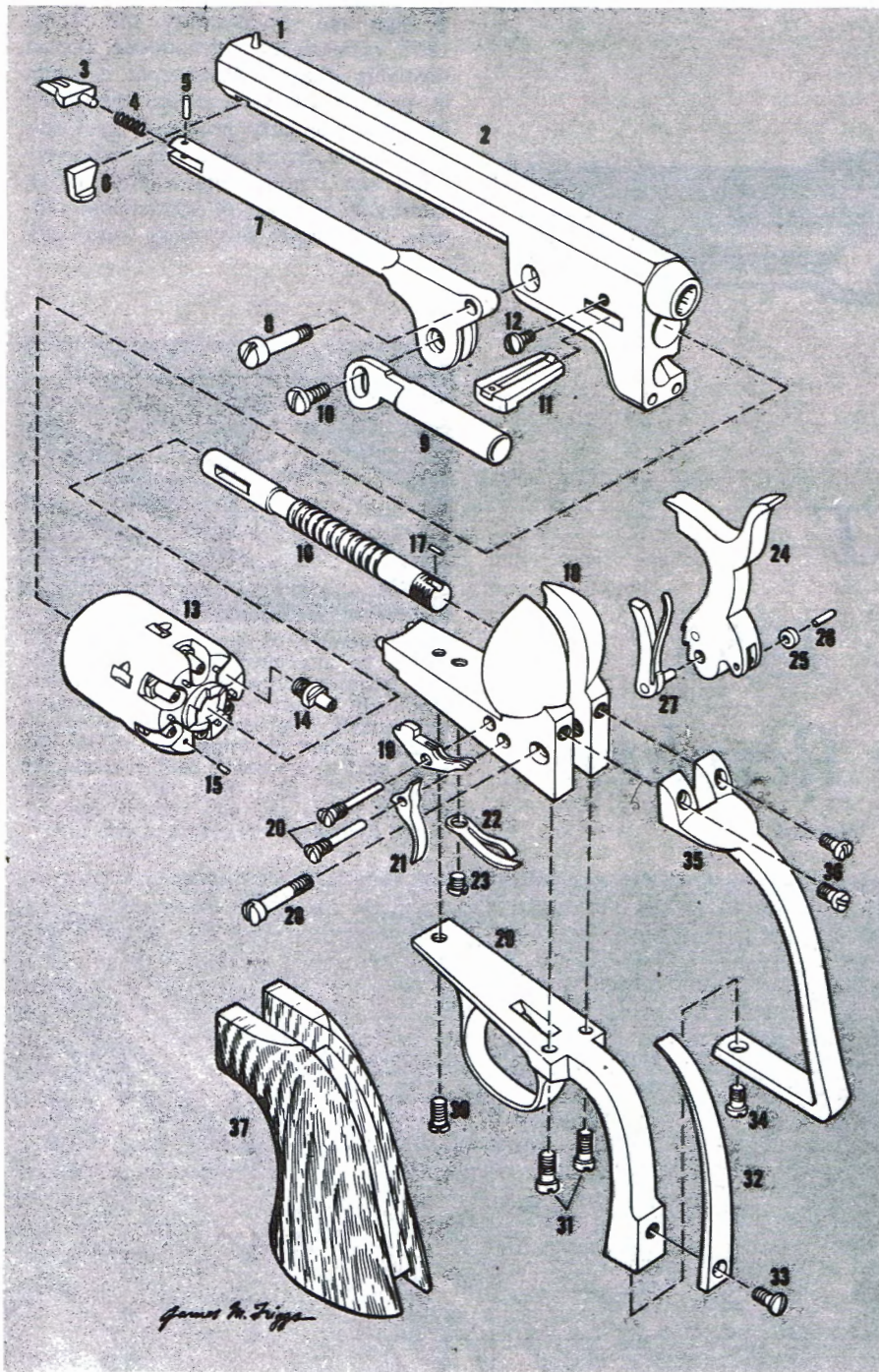


Born—Westboro, Mass.,  
Dec. 8, 1765  
Died—New Haven,  
Conn., Jan. 8, 1825

AN interest in mechanics and an ability to simplify manufacturing processes characterized Eli Whitney from an early age. His prosperous farmer father wanted his son to go to college, but Eli was more interested in putting around his father's workshop. At the age of 15 he began the manufacture of nails there and soon had to hire a helper. When the demand for nails declined at the end of the Revolution, he turned his attention to hatpins and almost monopolized that business in his area of the state. By the time he was 18, however, an interest in going to college developed, and he set out to prepare for it and finally to enter Yale, from which he graduated at the age of 26.

After college, Whitney went south to prepare for a law career, and while there he developed the cotton gin that was patented in 1794. Succeeding years were filled with patent suits and struggles to manufacture and market his products. Despite the fact that he eventually won his suits, Whitney received little financial reward for his epoch-making machine.

As early as 1798 Whitney realized the cotton gin was a lost cause financially, and he turned his attention to firearms. In that year he obtained a contract for 10,000 muskets from the Federal government, and he decided to attempt to manufacture the guns on an assembly-line basis with parts as nearly interchangeable as possible. The theory of interchangeability was not new with Whitney, but he was one of the first ever to apply it and certainly the first to use it in the manufacture of firearms. His project required the designing of entirely new machines and processes, and it took him 8 years to complete the contract instead of 2 which were specified. He had proved his point, however. His system was adopted in the Federal armories, future contracts were forthcoming, and the firearms business finally brought him the financial security he had been denied so long.—HAROLD L. PETERSON.



### LEGEND

- |   |  |
|---|--|
| 1. Front sight                              | 20. Trigger and cylinder locking bolt screws (2)   |
| 2. Barrel                                   | 21. Trigger  |
| 3. Loading lever latch                      | 22. Trigger and cylinder locking bolt spring       |
| 4. Loading-lever latch spring               | 23. Trigger and cylinder locking bolt spring screw |
| 5. Loading lever latch spring retaining pin | 24. Hammer   |
| 6. Barrel stud                              | 25. Hammer roll                                    |
| 7. Loading lever                            | 26. Hammer roll pin                                |
| 8. Loading lever screw                      | 27. Hand and hand spring                           |
| 9. Loading plunger                          | 28. Hammer screw                                   |
| 10. Loading plunger screw                   | 29. Trigger guard                                  |
| 11. Barrel wedge (with spring)              | 30. Front trigger guard screw                      |
| 12. Barrel wedge screw                      | 31. Rear trigger guard screws (2)                  |
| 13. Cylinder                                | 32. Mainspring                                     |
| 14. Nipples (6)                             | 33. Mainspring screw                               |
| 15. Safety pins (6)                         | 34. Butt screw                                     |
| 16. Cylinder pin                            | 35. Backstrap                                      |
| 17. Cylinder pin lock pin                   | 36. Backstrap screws (2)                           |
| 18. Lock frame                              | 37. Grip (one-piece)                               |
| 19. Cylinder locking bolt                   |  |





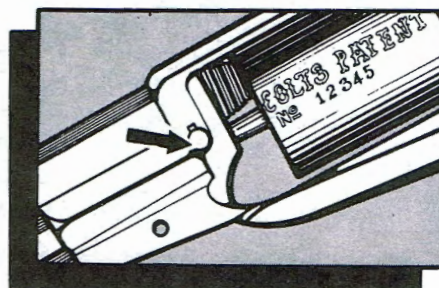
# COLT

## MODEL 1855

### Sidehammer Revolver

By Thomas E. Wessel

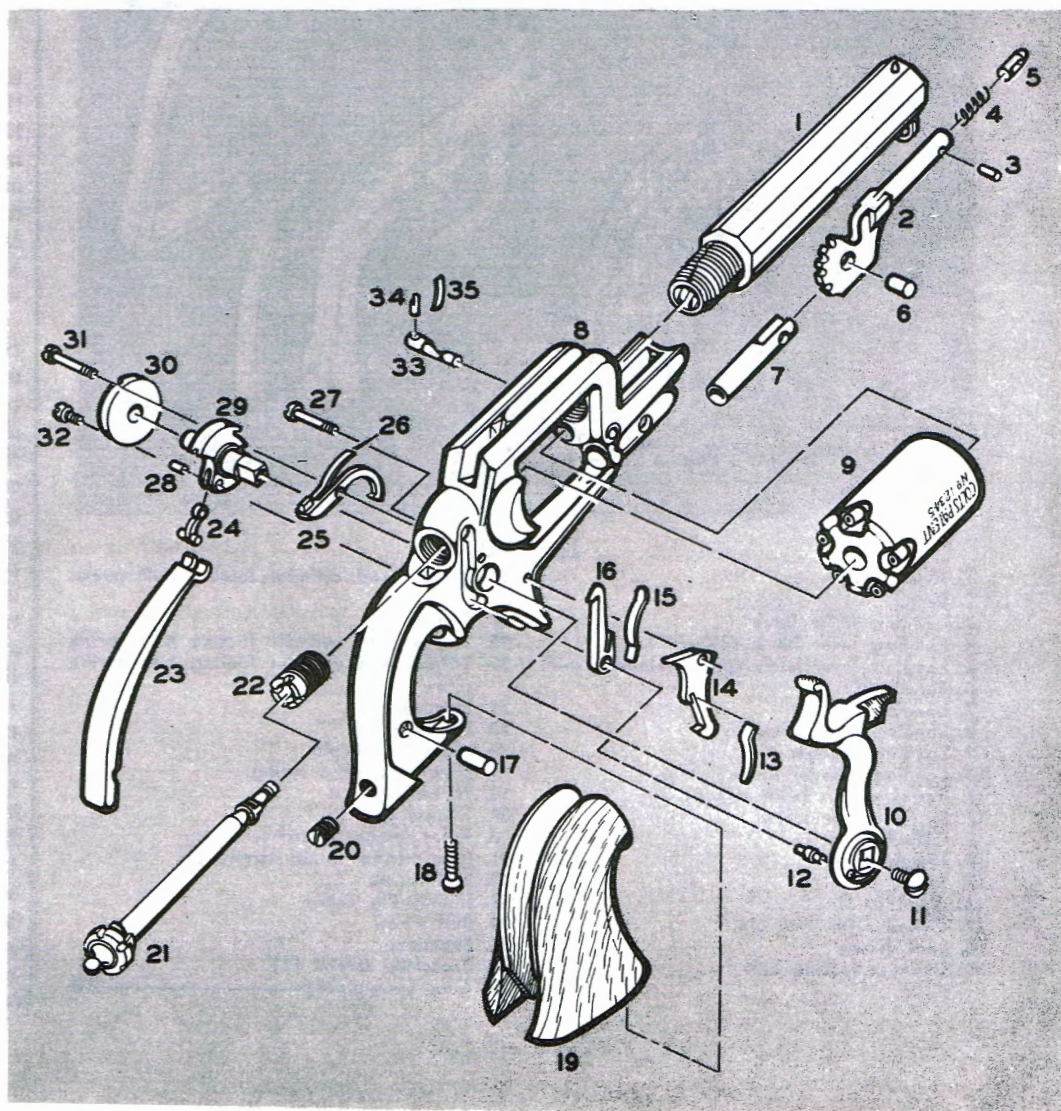
FROM the standpoints of both design and serviceability, the Model 1855 spur-trigger sidehammer pocket revolvers must be considered deficient in comparison with other percussion revolvers regularly produced by Colt's Patent Fire Arms Mfg. Co. Relatively weak and fragile parts resulted in an inordinate number of mechanical failures, but despite this many were sold.



**1** Disassembly of the Colt Root should not be attempted, due to the fragile and intricate nature of the parts, unless absolutely necessary. Should disassembly be required, commence by depressing the cylinder arbor retaining latch (33). On some models, a screw is used to retain the cylinder arbor (21). Withdraw arbor from rear of frame (8) and remove cylinder (9). Remove screw (18) and grip (19)

#### Parts Legend

1. Barrel
2. Loading lever
3. Loading lever latch pin
4. Loading lever latch spring
5. Loading lever latch (ball type)
6. Rammer pin
7. Rammer
8. Frame
9. Cylinder (nipples integral)
10. Hammer
11. Hammer screw
12. Hand pin
13. Trigger spring
14. Trigger
15. Hand spring
16. Hand
17. Mainspring retaining pin
18. Grip screw
19. Grip
20. Mainspring tension screw
21. Cylinder arbor
22. Cylinder arbor sleeve
23. Mainspring
24. Stirrup
25. Cylinder stop
26. Cylinder stop spring
27. Trigger screw
28. Stirrup pin
29. Sear
30. Side-plate
31. Cylinder stop screw
32. Side-plate screw
33. Cylinder arbor retaining latch
34. Arbor retaining latch pin
35. Arbor retaining latch pin spring





The basic patent covering the Colt Model 1855 revolver was granted to Elisha K. Root on Dec. 25, 1855 (No. 13,999). Root had joined the Colt firm in 1849 and was made shop superintendent. A gifted inventor, he designed many of the machines which made possible the mass production of Colt firearms and had much to do with the design of many Colt arms. Root eventually became President of Colt's upon the death of Samuel Colt in 1862. Root died in 1865.

The Model 1855 revolver, commonly

called Root Model by collectors, was made in cal. .28 and .31, and only at the Hartford, Conn., factory established in 1855. None was made in Colt's London factory, although some were made in the Hartford plant for the English trade and were stamped "Address Col. Colt—London".

#### Barrel styles

According to James E. Serven's *Colt Firearms 1836-1960*, the 4½" barrel revolvers are found only in cal. .31, and always with round barrels. The revolvers with 3½" barrel may have round or full fluted cylinder, round, or octagonal barrel, 3 different devices for holding the cylinder pin, and 2 types of cylinder engraving. Standard stocks were of varnished walnut, but ivory was also used on some guns. Some presentation Model 1855 revolvers have grips made from the famous Connecticut Charter Oak.

Model 1855-type revolvers were the first Colt revolvers to have a top strap over the cylinder and a screw-in barrel. They also were the first use by Colt's of the creeping-type loading lever.

## A MAN TO REMEMBER

### ELISHA KING ROOT

*Designed  
Machinery for  
Making the Colt  
Revolvers*



Born—Ludlow, Mass.,

1808

Died—Hartford, Conn.,

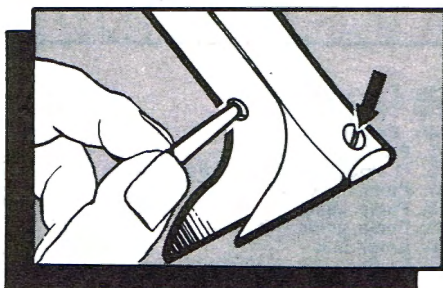
1865

**E**LISHA Root was directly responsible for much of the success of 2 great American manufacturing companies, Collins & Company, and Colt. Born on his father's farm, young Root attended public schools until he was old enough to start apprenticeship as a machinist. After completing his training, he worked in various shops in Chicopee Falls and Ware until he was 24. Then, in 1832, he went to work for the Collins Company in Collinsville, Conn., a firm specializing in axes.

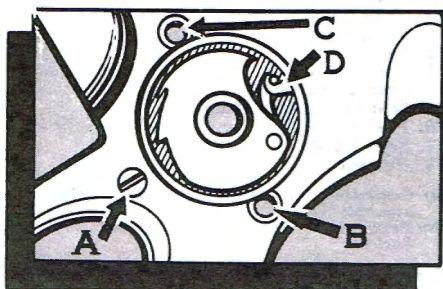
It was during his employment by Collins that Root first displayed his mechanical genius. Starting as a lathe operator, he quickly rose to be foreman, and finally superintendent. On the way he transformed the company from a small hand shop to a well-equipped factory and enabled the firm to obtain almost a monopoly on manufacture of American axes.

In 1849 Samuel Colt offered Root the superintendency of his new armory at Hartford, and Root accepted. The armory was still in the building stage, and during the next 5 years Root designed many of the buildings as well as most of the machinery. He invented machines for boring and rifling gun barrels, stock-turning, and cartridge-making. Most important, however, were his drop hammer inventions of 1853 and 1858 which became standard and remained popular until the modern board drop was invented. Upon Colt's death in 1862, Root became president of the armory, and held this post until his own death in 1865.

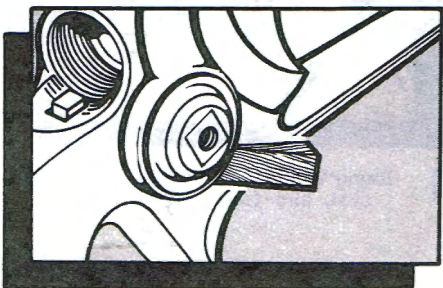
Of Root it has been said, "The credit for the revolver belongs to Colt; for the way they were made, mainly to Root". — HAROLD L. PETERSON.



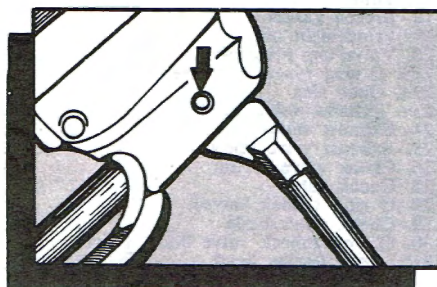
**2** Next, remove mainspring tension screw (20—arrow) and drift out mainspring retaining pin (17). This will relieve spring tension on moving parts



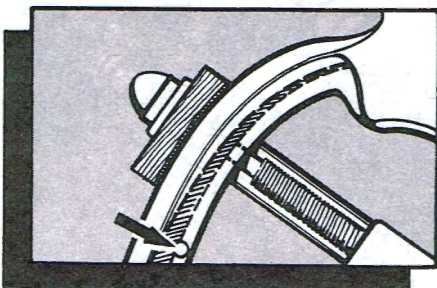
**3** Continue by removing (A) trigger screw (27), (B) side-plate screw (32), and (C) cylinder stop screw (31). Tap out side-plate (30), then using a small screwdriver or punch as a lever, flick (D) mainspring free of stirrup (24)



**4** Remove hammer screw (11). Insert a narrow, hardwood wedge in small crevice between hammer (10) and frame, and tap gently. This will pry off hammer which is usually hard pressed in place on the sear (29), which may now also be removed from left side of frame. Trigger (14), trigger spring (13), cylinder stop (25), cylinder stop spring (26), hand (16), and hand spring (15) may now be dismounted. Removal of these parts is obvious once the side-plate is off, but removal sequence is important



**5** Unlatch loading lever (2) and push down until rammer pin (6) is seen through hole in front portion of frame (arrow). Drifting out of rammer pin will permit removal of loading lever assembly and rammer (7)



**6** Reassemble in reverse order. When replacing mainspring retaining pin, it is necessary to compress mainspring to align groove in spring with pin hole in frame. Accomplish this by placing a small block of soft wood, shaped to contour of backstrap, and felt padded on surface which bears on backstrap. Using a woodworker's clamp, from which the button has been removed, apply to mainspring as shown and compress until pin hole (arrow) is clear, then insert mainspring retaining pin, and replace mainspring tension screw (20)





# CROSMAN

## Series 130 Pistol

By THOMAS E. WESSEL

**I**N 1952 the Crosman Arms Co., Inc., Fairport, N. Y., introduced the Series 130 pneumatic single-shot pistol. Produced in cal. .177 (Model 137) and .22 (Model 130), this pistol has a rifled barrel and shoots lightweight skirted lead pellets.

This pistol is well suited for low-cost indoor target practice as it develops relatively low power and very little noise. It is cheaper to shoot than a CO<sub>2</sub> pistol as no CO<sub>2</sub> gas cylinders are required. However, it must be pumped up before each shot, and this requires considerable effort on the part of the user. About 6 pump strokes are needed for each shot at 25-ft. range, and up to 10 pump strokes are made when additional power is desired.

There were several manufacturing changes in this pistol since its introduction. The pistol illustrated is the most up-to-date version incorporating the latest changes.

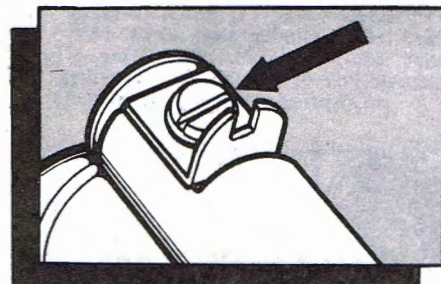
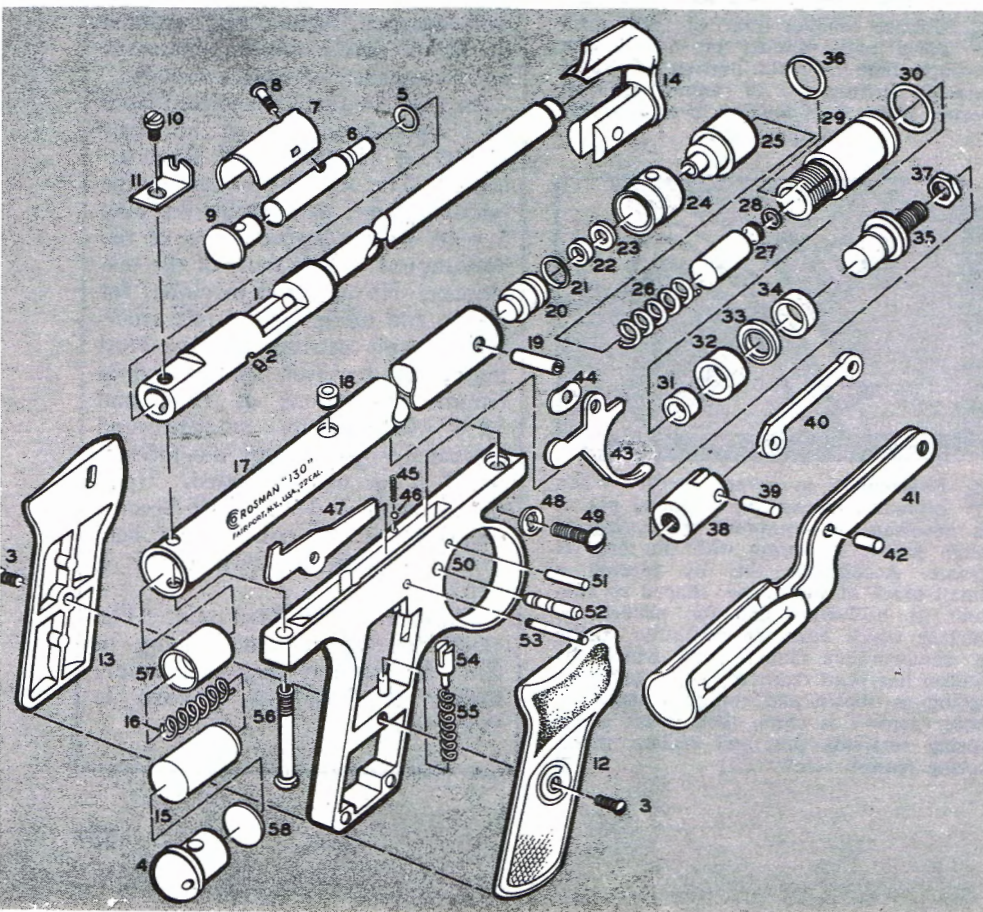
### Parts Legend

1. Barrel
2. Lock pin
3. Grip screw (2)
4. Tube plug
5. O ring (breech bolt)
6. Breech bolt
7. Loading sleeve
8. Breech bolt screw
9. Breech plug
10. Sight screw
11. Rear sight
12. Right grip
13. Left grip
14. Front sight
15. Sear block stop
16. Sear spring (for sear block)
17. Tube
18. Breech gasket
19. Front sight pin
20. Valve cap assembly
- 21a. O ring (valve cap assembly)
- 22a. Quad ring
- 23a. Exhaust valve washer
24. Exhaust valve ring
25. Exhaust valve body
26. Check valve spring
27. Check valve
28. O ring (check valve)
29. Check valve body
30. O ring (check valve body, front)
- 31b. Compression head

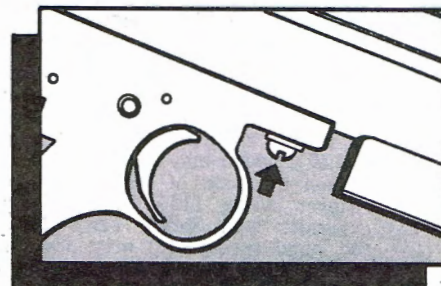
- 32b. Cup washer
- 33b. Felt retainer
- 34b. Felt washer
35. Piston
36. O ring (check valve body, rear)
37. Pump lock nut
38. Pump guide
39. Pump guide pin
40. Lever link
41. Lever
42. Lever rivet
43. Trigger
44. Takeup spring
45. Safety spring
46. Safety ball
47. Sear
48. Front frame screw lockwasher
49. Front frame screw
50. Grip frame
51. Trigger pin
52. Safety
53. Sear pin
54. Sear spring head
55. Sear spring (for sear)
56. Frame screw
57. Sear block
58. Bumper

(a) Components of permanent factory valve cap assembly (20)

(b) Permanently assembled to piston (35) at factory

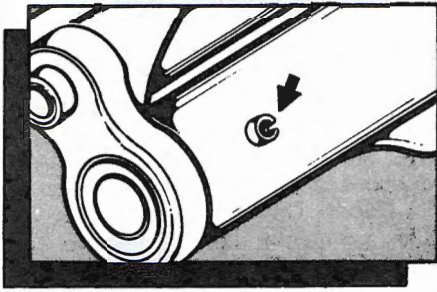


**1** Remove sight screw (10), rear sight (11), and frame screw (56)

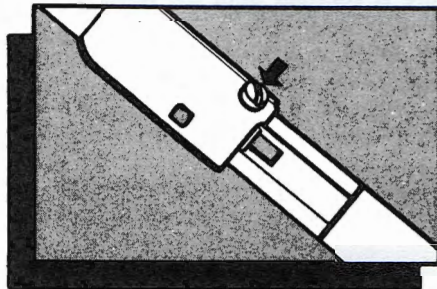


**2** Remove front frame screw (49) and front frame screw lockwasher (48). Grip frame (50) may now be separated from barrel and tube

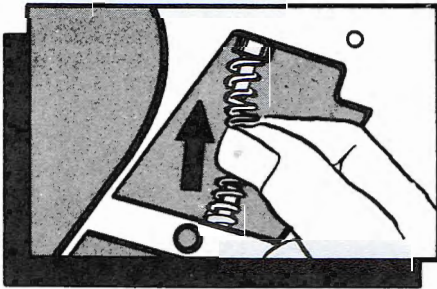




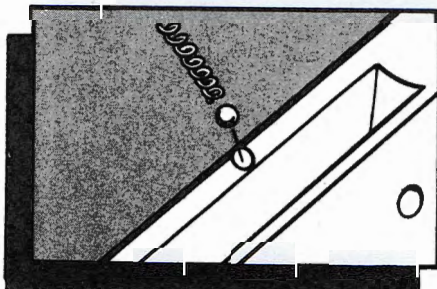
**3** Drift out front sight pin (19) and remove front sight (14). The entire pump assembly, from lever (41) back to and including piston (35), may now be withdrawn from front of tube (17). From rear of tube, withdraw tube plug (4), bumper (58), and sear block stop (15). Sear spring (16) and sear block (57) may also be removed. Insert a  $\frac{3}{8}$ " dowel into rear of tube and push out exhaust valve body assembly



**4** Remove breech plug (9) from rear of barrel (1). Remove breech bolt screw (8) and loading sleeve (7). Breech bolt (6) may now be removed from rear of barrel



**5** Remove grip screws (3) and grips (12) and (13). With thumb and forefinger, lift up on sear spring (55) and remove it. Sear spring head (54) will drop out. Drift out sear pin (53) from right to left and remove sear (47). Drift out trigger pin (51) from right to left, and remove trigger (43) and takeup spring (44). Reassemble in reverse



**6** When working with grip frame assembly, be careful not to lose safety spring (45) and safety ball (46)





# **CROSMAN**

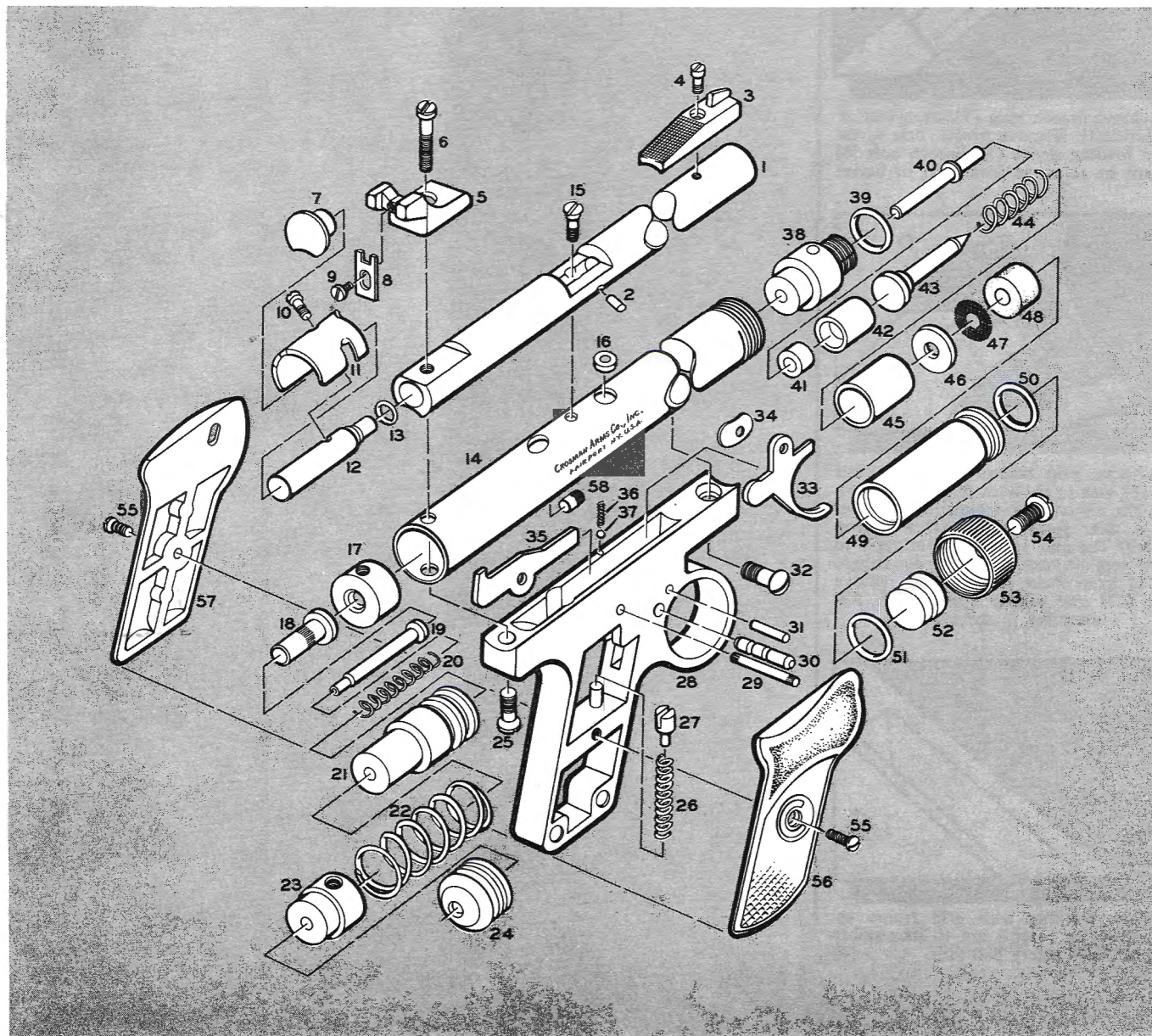
## **Series 150 Pistol**

By THOMAS E. WESSEL

THE Crosman Series 150 pistol, produced by Crosman Arms Co., Inc., Fairport, N. Y., uses carbon dioxide (CO<sub>2</sub>) gas as a propellant, and shoots lightweight, skirted lead pellets from a rifled barrel. Commonly called a CO<sub>2</sub> Pelgun, this pistol is of single-shot type, and was introduced in 1954. It is produced in cal. .177 (Model 157) and .22 (Model 150).

Unlike pneumatic and spring-type air guns, this pistol has no lever or pump. Liquid CO<sub>2</sub> is contained in a steel cylinder called a Powerlet which is inserted in a tube under the barrel. Pulling the trigger releases the hammer which actuates a valve, and the valve releases a certain amount of gas into the barrel to drive out the pellet. As soon as some of the gas is let out of the Powerlet, more liquid turns into gas and keeps the pressure up. Thus the pressure is constant until the last drop of liquid turns to gas.

This pistol is popular for low-cost target practice, and is well suited for indoor use as it develops relatively low power and very little noise.





## Try It This Way

### Holding small parts in vise

Small parts are held in a bench vise without marring by placing them between the jaws of a wooden, spring-type clothes-pin. Round parts are fitted by the round slot in the pin, and irregular parts are easily fitted by whittling the soft wood.—RUSSEL B. HODGES

### Trigger stop screw

For a trigger stop screw on my air pistol I had the trigger drilled and tapped for a headless typewriter screw. A hole in forward part of trigger guard gives access to a small screwdriver. Touch-up with cold blue completed the job.—PAUL H. ADAMS

### Hand-fitted pistol grips

I use school modeling clay to obtain exact form of target pistol grips. Remove formed clay from pistol by carefully splitting with sharp knife. Then carve grips from solid wood with clay as model. The formed clay also can be used as pattern for mold made of liquid rubber mold material; remove clay when mold has set, and cast grips with liquid plastic in the mold. These materials are available from dealers in model-making supplies.—CHARLES M. BUSH

### Grinding welds

Use a vise and a small cup wheel in a drill press to grind a weld surface to a new flat. Put the piece in the vise and move the whole vise across the table. With a hard weld, this makes an impossible job easy. In addition, it will give an almost perfect flat surface.—W. A. HAUGHEY

### Removing steel chips

When compressed air is not available, I have found that steel chips can be thoroughly removed from bottom of a drilled hole by holding a magnet against a steel scriber and touching the scriber point to the chips.—E. W. BELDING

### Etching before bluing

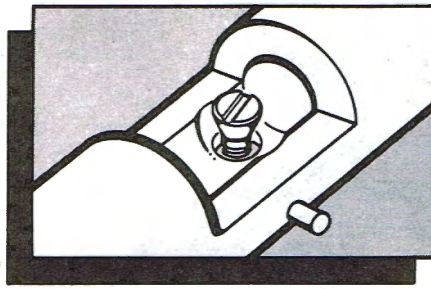
If you are bluing your gun with one of the salt-bath processes, but want a soft, non-reflecting surface instead of the usual bright-salt blue, lightly etch the surface with a 10% nitric acid solution. This is done after the degreasing step, and the parts then rinsed thoroughly before they are put into the salt bath.—WILLIAM DRESSER

### Turpentine and pumice for rust

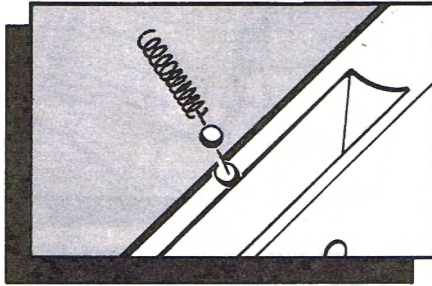
The rust-removing performance of turpentine can be improved with pumice stone. After softening the rust with turpentine, finish with powdered pumice on a turpentine-saturated rag, and polish off hard rust spots with the stone direct. I have used this method to remove bad rust from even nickel-plated guns without damage to the remaining finish. It also leaves a nice appearance on the cleaned areas.—GEORGE S. BUNCH



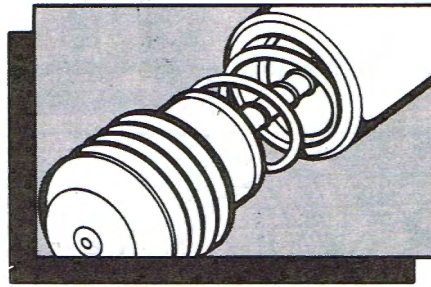
**1** Before disassembly, exhaust all gas from pistol by successive cocking and firing. Then remove tube cap (53) and take out gas cylinder. Remove the rear and front frame screws (25 & 32). The barrel and tube assembly may now be separated from the grip frame (28)



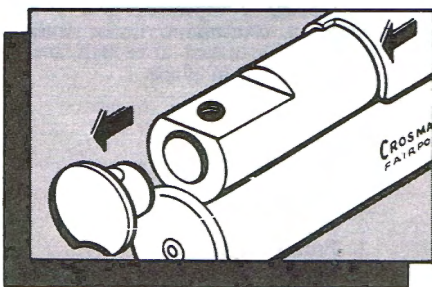
**4** Remove hold-down screw (15) and lift barrel (1) off tube (14)



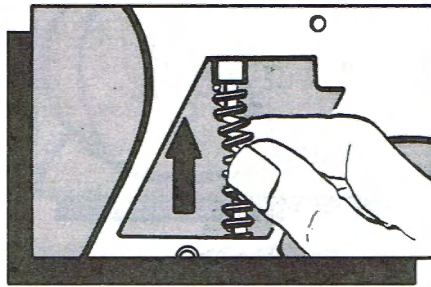
**2** During disassembly, take care that safety spring (36) and safety spring ball (37) do not drop out of the grip frame and become lost



**5** From rear of tube, remove hammer assembly consisting of cocking cap (24), tube plug (23), hammer spring (22), hammer (21), cocking spring (20), cocking rod (19), and hammer plug (18). Using a 1/8" rod from rear of tube, push valve assembly out forward. Through screw hole in top of tube, drive out thrust pin (58) and then remove small tube plug (17)



**3** Remove rear sight screw (6), rear sight (5), and breech plug (7). Remove the breech bolt screw (10) and slide the breech bolt (12) and the loading sleeve (11) off to the rear



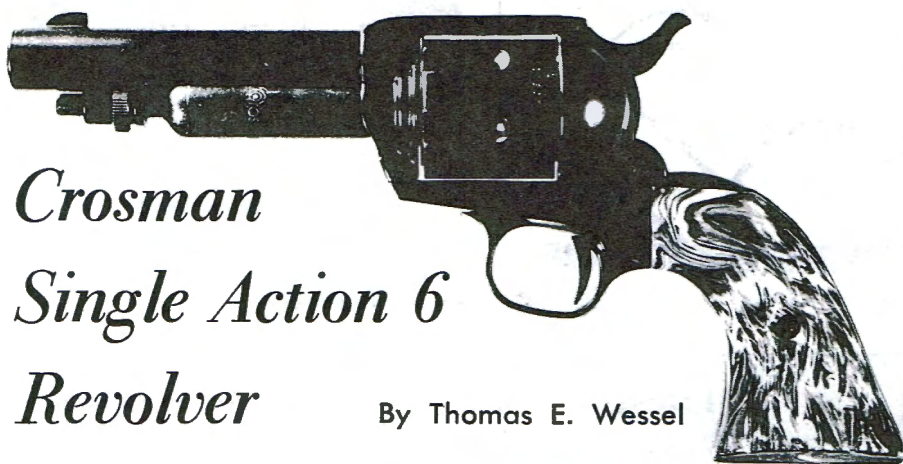
**6** Remove grip screws (55) and right and left grips (56 & 57). Lift sear spring (26) off its guide in grip frame, and remove sear spring head (27). Drift out sear pin (29) from right to left, and remove sear (35). Drift out trigger pin (31) from right to left, and remove trigger (33) and take-up spring (34). Prior to reassembly, clean and oil all O-rings. Reassemble in reverse order

## Parts Legend

- |                          |                            |                            |
|--------------------------|----------------------------|----------------------------|
| 1. Barrel                | 21. Hammer*                | 41. Exhaust valve washer   |
| 2. Lock pin              | 22. Hammer spring*         | 42. Exhaust nut            |
| 3. Front sight           | 23. Tube plug*             | 43. Piercing pin           |
| 4. Front sight screw     | 24. Cocking cap*           | 44. Check valve spring     |
| 5. Rear sight            | 25. Frame screw, rear      | 45. Spacer                 |
| 6. Rear sight screw      | 26. Sear spring            | 46. Washer                 |
| 7. Breech plug           | 27. Sear spring head       | 47. Screen                 |
| 8. Sight blade           | 28. Grip frame             | 48. Filter                 |
| 9. Elevation screw       | 29. Sear pin               | 49. Piercing body          |
| 10. Breech bolt screw    | 30. Safety                 | 50. O-ring (piercing body) |
| 11. Loading sleeve       | 31. Trigger pin            | 51. O-ring (rest block)    |
| 12. Breech bolt          | 32. Frame screw, front     | 52. Rest block             |
| 13. O-ring (breech bolt) | 33. Trigger                | 53. Tube cap               |
| 14. Tube                 | 34. Take-up spring         | 54. Connecting screw       |
| 15. Hold-down screw      | 35. Sear                   | 55. Grip screw (2)         |
| 16. Breech gasket        | 36. Safety spring          | 56. Grip, right            |
| 17. Small tube plug      | 37. Safety spring ball     | 57. Grip, left             |
| 18. Hammer plug*         | 38. Exhaust valve          | 58. Thrust pin             |
| 19. Cocking rod*         | 39. O-ring (exhaust valve) |                            |
| 20. Cocking spring*      | 40. Valve stem             |                            |

\*Permanent factory assembly

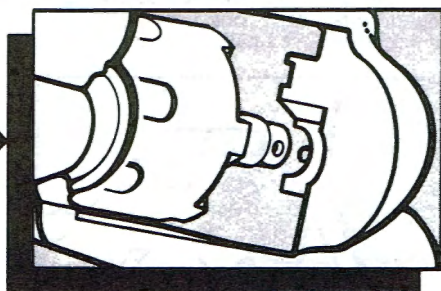




# Crosman Single Action 6 Revolver

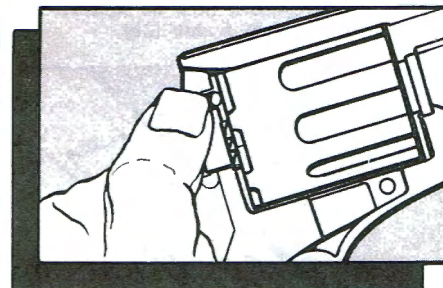
By Thomas E. Wessel

**1** To disassemble Crosman Single Action, first exhaust CO<sub>2</sub> gas by pushing hammer (10) forward with thumb and remove empty gas cylinder. Remove grip screw (22) and right and left grips (9 & 23). Support butt and muzzle of gun on wooden blocks to free cylinder (24). Place hammer at half cock and remove hammer screw (7) with lockwasher (6), 2 short frame screws (5), and long frame screw (4). Insert a screwdriver in slot behind trigger (17) and pry off right frame (3). **Caution:** Use care when removing right frame as internal parts are under spring tension. All internal parts may now be lifted away. Oil and clean all O-rings and seals before reassembly



**2** Commence reassembly by first assembling plate (25) onto valve assembly, then place valve, with plate in position, into cylinder. Install valve and cylinder assembly into left frame (2). Spot hole in valve fits over pin in frame casting. Place barrel (1) in left frame and locate shoulder of barrel in plate

**T**HE Crosman Single Action 6-shot cal. .22 gas-powered revolver was introduced in 1959. It uses Crosman Powerlet CO<sub>2</sub> cylinders as a propellant source and cal. .22 skirted pellets, or Pells, also adapted to air and gas rifles. The lock mechanism is of single-action type requiring hand cocking of the hammer for each shot.

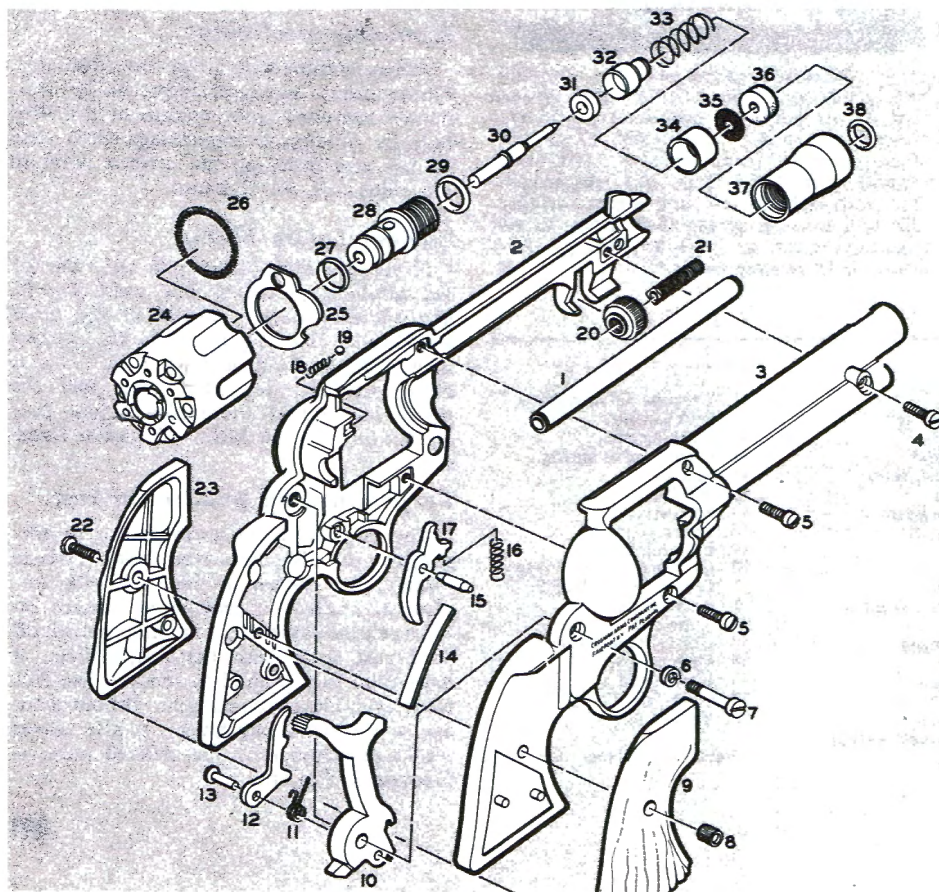


**3** Place cylinder spring (18) and ball (19) into depression in casting. Hold ball and spring lightly with left thumb, then rotate cylinder forward until ball raises slightly and back end of spring drops into depression in casting. Holding ball and spring firmly, turn cylinder backward until spring compresses and lies flat in depression. **Caution:** Cylinder must not be moved or disturbed after ball and spring are in place

## Parts Legend

1. Barrel
2. Frame, left
3. Frame, right
4. Frame screw, long
5. Frame screw, short (2)
6. Lockwasher
7. Hammer screw
8. Grip insert
9. Grip, right
10. Hammer\*
11. Index spring\*
12. Index hand\*
13. Index pin\*
14. Hammer spring
15. Trigger pin
16. Trigger spring
17. Trigger
18. Cylinder spring
19. Cylinder ball
20. Retaining nut
21. Retaining screw
22. Grip screw
23. Grip, left
24. Cylinder
25. Plate
26. Pell spring
27. O-ring (rear valve body)
28. Valve body
29. O-ring (front valve body)
30. Valve stem
31. Exhaust nut washer
32. Exhaust nut
33. Valve return spring
34. Spacer
35. Screen
36. Filter
37. Piercing body
38. CO<sub>2</sub> seal

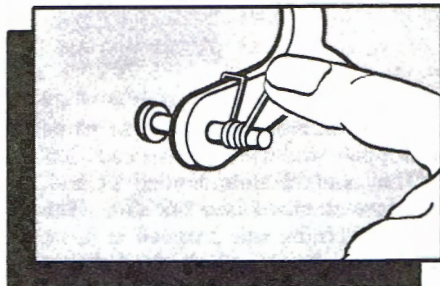
\* Factory subassembly



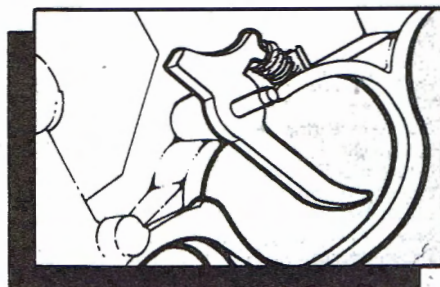


Velocity is about 245 feet per second (f.p.s.) with the 14.3-gr. skirted pellet which gives a penetration of 1" in hard laundry soap at 5 ft. This pistol is thus capable of inflicting a serious wound and should be employed with the same respect and caution as a cartridge firearm.

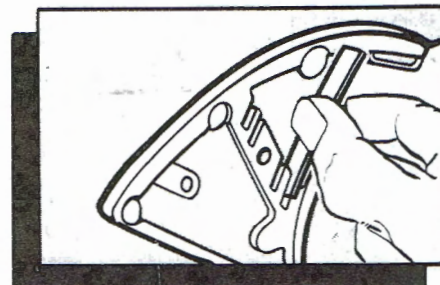
This pistol is suitably accurate for informal short-range target shooting.



**4** Index hand (12) should not normally be disassembled from the hammer (10), since that disturbs the riveted end. Should it be necessary, the hammer group may be reassembled by placing index pin (13) through its hole in index hand (12), and placing index spring (11) over pin and hooking it to hand as shown. Next, place other end of index pin in its hole in left side of hammer and catch index spring on hammer boss. Re-rivet or peen end of index pin against right side of hammer. When placing hammer assembly in right frame, hold index hand away from indexing lugs on cylinder lest it be disturbed. Hammer assembly may be held in place with a 1/8" slave pin



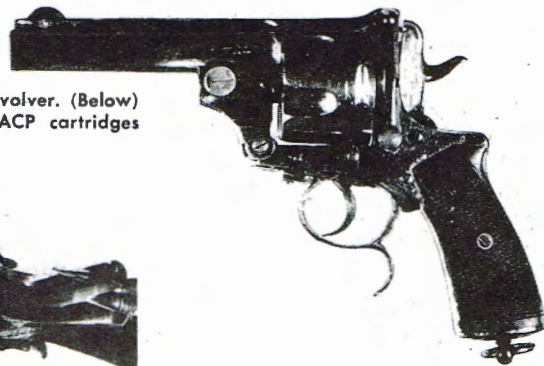
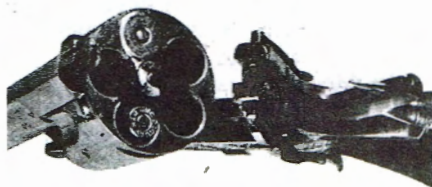
**5** Assemble trigger pin (15), trigger (17), and trigger spring (16)



**6** Put hammer spring (14) into lower slot in left frame. Place retaining screw and nut (21 & 20) in notch at muzzle end, then place right frame over left and press halves together. Replace frame screws, hammer screw and lock-washer (7 & 6), grips, and grip screw ■

## A REAL HAND-CANNON

(r.) The .577/.600 Francotte revolver. (Below) Cylinder with .577 and .45 ACP cartridges in chambers



**T**HE 'thing' was a 5-shot revolver hardly bigger than a 1917 Colt New Service. It tipped the scales at 43 ozs. and was of hinged frame construction. Engraved on its barrel rib was the inscription "A. Francotte à Liège", and the figure ".577" was stamped on the left side.

Examination showed that there was nothing about the gun that was .577". The finely rifled 7-groove barrel showed bore diameter .600" and groove diameter .620". Those familiar with English cartridges can clear this one up right away. .577 does not represent the caliber but rather the basic cartridge case used. This pistol fired a cartridge whose case was cut down from a .577 Snider or .577/.450 Martini-Henry rifle cartridge. A more complete caliber designation, in keeping with English convention, would be ".577/.600 Pistol".

Information on the gun was very courteously supplied by its maker, Auguste Francotte, a Belgian gunmaker long famous for his high-grade double-barrel shotguns. Revolvers of this design were made in .320, .380, .450, and .500 calibers and "occasionally also in .577 caliber". They were manufactured about 1892 under the patent of Phillip Couinet (gun so marked), a Francotte employee whose patent covered the ice-tong-like frame lock. It was stated that the .577 caliber was "popular with the police and pioneers going to distant colonies".

It is believed that the following will amplify this picture. In the early 1890's England undertook the task of conquering the Egyptian Sudan, which was defended by tribes under the leadership of wild dervishes. Demand arose amongst the British officers for a handgun with *real* stopping power to halt the fanatical onslaughts of the sword-swinging natives. Our mystery magnum may have resulted, directly or indirectly, from that requirement. Recently the author had the opportunity to examine another revolver of this caliber, a solid-frame clover-leaf cylinder job made by Tranter of England—which perhaps adds some weight to this idea.

For reloading the gun at hand, brass

was cut from some solid head .577 Snider rifle cartridges. A bullet mold was made up for a Keith-type bullet, which had to be generously hollow-based to keep its weight within reason. Even so, the finished product, lubricated and sized to .619", pulled down the balance pan to 535 grs.

Being in the dark at first as to the factory loadings of the .577 pistol cartridge, I started with 25 grs. of Fg blackpowder. The general high class of workmanship of the weapon and the inscription "Acier Fondu" (forged steel) appearing on its barrel were reassuring. A load of 45 grs. of half-and-half FFg and Fg, about all the cartridge would take, appeared to be maximum and safe—not only for the gun but also for the guy behind it. I found later from the Kynoch ballistic tables that the original factory .577 pistol cartridge had a 450-gr. lead bullet ahead of 28 grs. of blackpowder, a load with a muzzle velocity of 725 f.p.s. and a muzzle energy of 525 ft. lbs. On that basis I would estimate a muzzle velocity of 800 f.p.s., which would give a muzzle energy of 760 ft. lbs.

Accuracy was found quite good, in spite of the fact that the gun had to be aimed quite low to compensate for the terrific jump. With the 40-gr. load, several palm-size groups were obtained at 45 ft. using the original sights and holding 26" low.

Smokeless loadings were also experimented with, and about 11 grs. of #6 appeared to be a maximum safe load. These smokeless loadings were abandoned however, when it was discovered that they had a dangerous tendency to blow out their bullet noses and leave a lead sleeve in the bore.

I have been asked at various times to describe what it is like to touch off one of those 40-gr. blackpowder loads in the 'magnum'. This is not easy to do. About all I can say is that it is spectacular and unforgettable. The thing erupts with a terrific boom, flash, and clouds of thick smoke, followed by a powerful arm stroke upward.—F. VON MULLER.



# CZ Model 27 Pistol

By E. J. Hoffschmidt



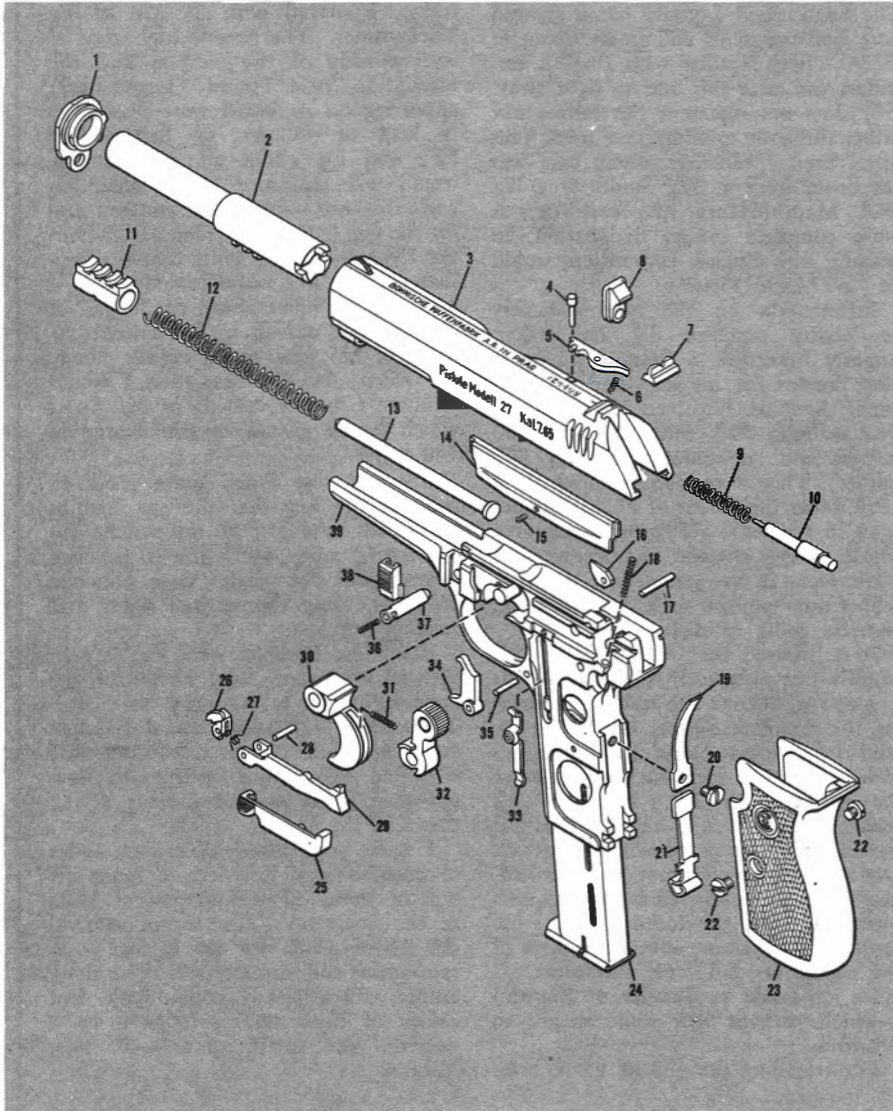
THE Czech Model 27 pistol has had a short but intriguing history. During the early 1920's, the newly formed Czech army was seeking a military pistol. Around the same time the Mauser firm was experimenting with a pistol designed by Josef Nickl, who had been an assistant to Paul Mauser. The Nickl design featured a locked slide with rotating barrel, and the hammer was external. Lockwork, frame, and magazine were like that of the Mauser Model 1910 Pocket Pistol. Eventually the Czechs were licensed to manufacture this gun. It was issued in 1922 and revised in 1924 to become the standard military pistol. Although the main topic of this article is the Model 27, the Model 24 must be mentioned because it is often mistaken for the later Model 27 gun.

Like the Mauser prototype, the Model 24 is a locked-breech gun with a barrel that rotates to unlock. This feature was dropped in the Model 27, since a simple blowback system is strong enough for the cal. .32 cartridge.

The Model 27 saw wide service before, during, and after World War II, and thousands were brought back from Europe by U. S. soldiers. There are 3 more or less common variations in markings. Late prewar and early wartime manufactured guns are usually blued and well finished and are usually marked "Bohmische Waffenfabrik AG in Prag" along the top of the slide. As the war progressed, efforts were made to increase production by substituting stamped for machined parts. The side-plate, safety arm, magazine catch, and

firing pin retainer were all replaced by sheet metal stampings. The trade name was dropped, and the German code letters "fnh" and "Pistole Modell 27 Kal. 7.65" were stamped into the slide. The fine prewar bluing was dropped in favor of the more durable Parkerized finish. Production was started up again by the Czechs shortly after the end of World War II. These postwar guns are marked "Ceska Zbrojovka-Narodni Podnik" above "Strakonice" which means Czech National Cooperative Arsenal in Strakonice.

As pocket pistols go the gun is simple, compact, and reliable. The sights and grip are good. The efficient Mauser-type safety catch is one of the best features of the gun. Simply cock the hammer and



## Parts Legend

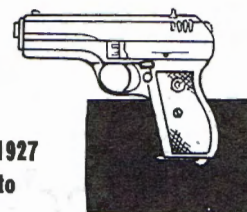
1. Barrel bushing
2. Barrel
3. Slide
4. Extractor pin
5. Extractor
6. Extractor spring
7. Rear sight
8. Firing pin retainer
9. Firing pin spring
10. Firing pin
11. Barrel retainer
12. Recoil spring
13. Recoil spring guide
14. Side-plate
15. Side-plate screw
16. Ejector
17. Ejector pin
18. Safety and trigger bar spring
19. Hammer spring
20. Spring retaining screw
21. Magazine catch
22. Grip screw (2)
23. Grip
24. Magazine
25. Safety catch
26. Disconnecter
27. Disconnecter spring
28. Hinge pin
29. Trigger bar
30. Trigger
31. Trigger spring
32. Hammer
33. Safety release
34. Magazine disconnecter
35. Disconnecter hinge pin
36. Takedown catch spring
37. Takedown cross pin
38. Takedown catch
39. Frame



press down the safety until it clicks. Press the button below the catch and it snaps back to fire position in an instant. Another admirable feature is the simple takedown. The gun can be field stripped in seconds.

From the military standpoint it leaves a lot to be desired. So little of the hammer is exposed that it is awkward to cock if the shooter's hands are greasy or wet. The magazine safety is another debatable feature. If the magazine is

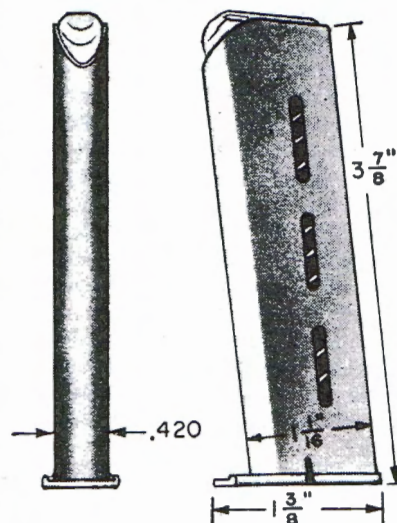
lost, the round in the chamber cannot be fired. The gun cannot even be used as a single-shot weapon. When the last shot is fired, the magazine follower holds the slide open. This makes it necessary to remove the magazine against the pressure of the spring-loaded slide, which greatly slows magazine changes. The Czechs too realized the shortcomings of the Model 27 and around 1950 replaced it with a double-action pistol greatly resembling the Walther Model PP.



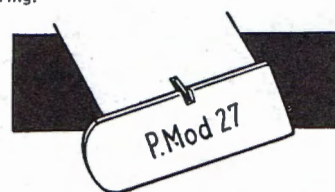
**CZ Model 27**  
**.32 Cal. Auto**

## PISTOL MAGAZINES

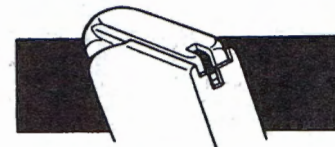
One of a series



Two models of this pistol were brought over by returning GI's—the gray-finished pistol usually marked Model 27 and the blued pre-war pistol marked Bohmische Waffenfabrik on the top of the slide. The operating mechanism of this gun bears a close resemblance to the 1910 Mauser. While far from the best .32 cal. automatics, they are interesting and serviceable guns. The main drawback is the fact that when the last shot has been fired, the magazine holds the slide open, making it necessary to withdraw the magazine against the force of the recoil spring.



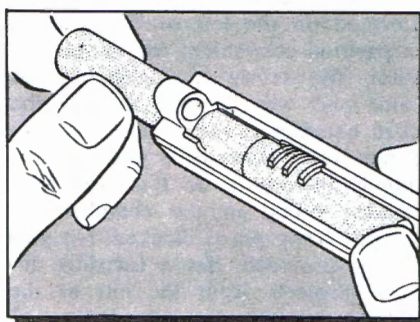
The magazine, too, resembles the 1910 Mauser, in that it has elongated observation slots instead of holes. The floorplate will normally be stamped as shown, and is retained by a portion of the magazine follower spring.



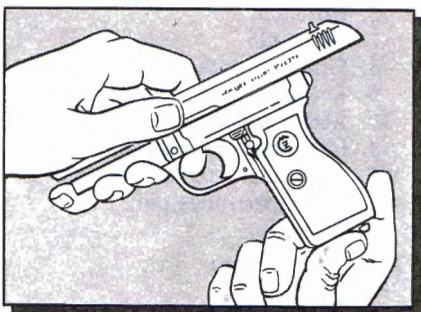
The Model 27 magazine has a pressed steel follower that again resembles the 1910 Mauser, but the offset notch that cuts through the follower and the back strap peg identify it as a Model 27.—E. J. HOFF-SCHMIDT.



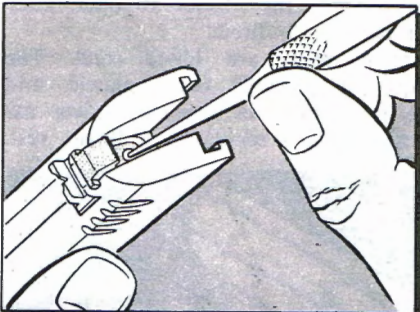
**1** To strip Model 24 or Model 27, pull slide back over an empty magazine. Slide will stay open and relieve tension on barrel retainer (11). Push in protruding end of takedown cross pin (37), at same time slide takedown catch (38) down and free of frame



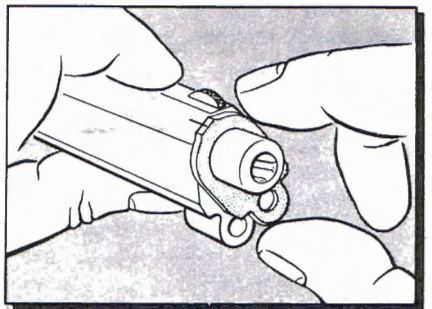
**4** To get barrel (2) out of slide, pull it forward until the 3 barrel lugs line up with cut in slide as shown. Rotate lugs into cutout and pull barrel free of slide. On earlier Model 24, barrel can be pulled straight out of slide



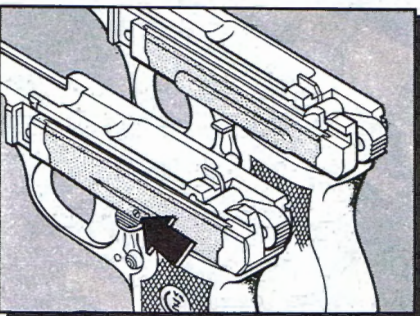
**2** After takedown catch assembly has been removed, pull out magazine as shown and ease slide assembly off frame. Magazine is difficult to remove because it holds the slide open, and must be removed against pressure of recoil spring



**5** Firing pin (10) is retained by a small machined block in early guns, and by a sheet metal stamping in wartime models. To remove pin, simply push protruding end of it below surface of firing pin retainer (8), and pry retainer up and out as shown



**3** Barrel is retained by barrel bushing (1). First step in removing barrel, is to turn bushing about 30° until line on bushing coincides with line on slide (3). Then bushing can be pulled out of slide and off barrel



**6** With side-plate (14) and grip (23) removed, operating parts can be easily removed. Early guns have a small side-plate screw (15) which must be loosened before plate can be slid up. Screw, if overly tightened, will bend side-plate and bind parts ■



# CZ Model 50 Pistol

By E. J. HOFFSCHMIDT

**I**N 1948, the Czech arms factories were nationalized, and shortly thereafter various new Czech commercial arms were introduced. One of these new guns was the CZ Model 50 automatic pistol developed in 1947-48 by Jan and Jaroslav Kratochvil and produced by Ceska Zbrojovka — Narodni Podnik, Strakonice (Czech Arms Factory, National Corporation, in Strakonice). Besides being sold commercially, this pistol is used by Czech police. It is of blowback design, fires the universally-popular .32 Auto cartridge, and weighs 24½ ozs. In size, general appearance, and basic construction, it is similar to the German Walther Model PP pistol. However, these pistols differ from each other mechanically, especially in the lockwork.

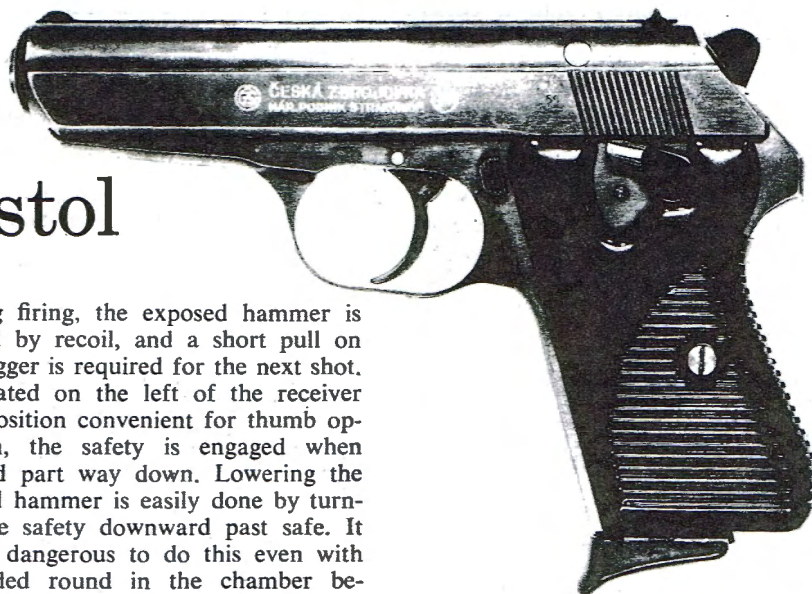
Like several other modern automatic pistols, the CZ 50 has a double-action lock mechanism. This enables the pistol to be safely carried uncocked with the chamber loaded and safety disengaged, and quickly fired like a double-action revolver by a long pull on the trigger.

During firing, the exposed hammer is cocked by recoil, and a short pull on the trigger is required for the next shot.

Located on the left of the receiver in a position convenient for thumb operation, the safety is engaged when pivoted part way down. Lowering the cocked hammer is easily done by turning the safety downward past safe. It is not dangerous to do this even with a loaded round in the chamber because the firing pin is blocked. No grip safety is provided, but a cartridge indicator projects from the left of the slide when the chamber is loaded.

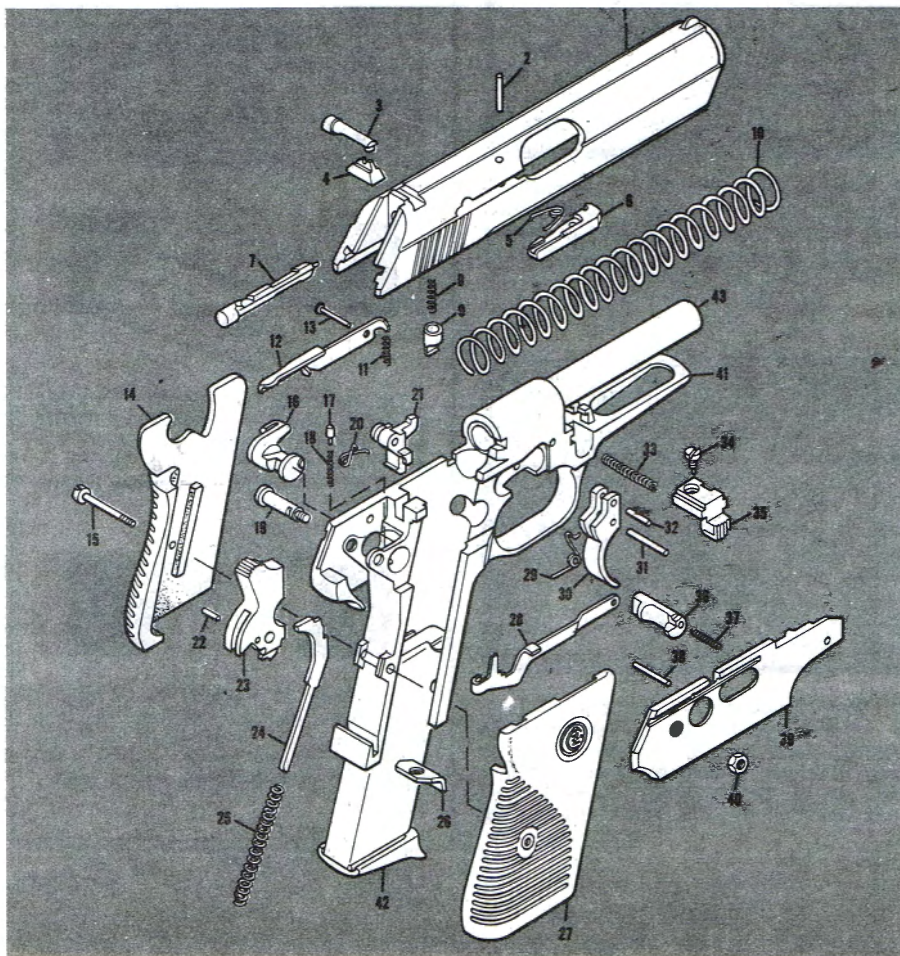
The 8-round magazine is removed for loading by depressing the magazine catch on the upper left of the receiver, and a takedown catch on the right side permits easy field-stripping. A combination hold-open latch and ejector holds the slide of the Model 50 open after the last shot is fired.

Most parts are blued steel. The grips are grooved black plastic, and the magazine has a plastic lower extension which serves as a finger rest.

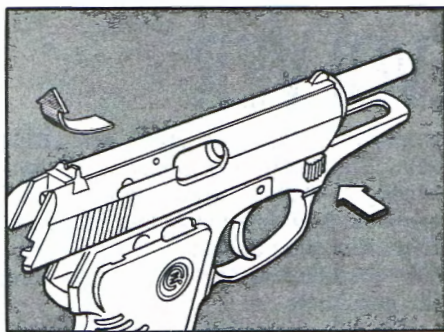


## Parts Legend

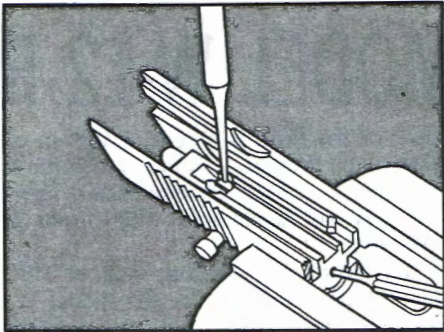
1. Slide
2. Extractor pin
3. Cartridge indicator
4. Rear sight
5. Extractor spring
6. Extractor
7. Firing pin
8. Firing pin lock spring
9. Firing pin lock
10. Recoil spring
11. Hold-open latch spring
12. Hold-open latch and ejector
13. Hold-open hinge pin
14. Left grip
15. Grip screw
16. Safety
17. Safety plunger
18. Safety spring
19. Hammer bolt
20. Sear spring
21. Sear
22. Hammer strut pin
23. Hammer
24. Hammer strut
25. Hammer spring
26. Spring retainer
27. Right grip
28. Trigger bar
29. Trigger spring
30. Trigger
31. Trigger pin
32. Trigger bar pin
33. Takedown catch spring
34. Takedown catch screw
35. Takedown catch
36. Magazine catch
37. Magazine catch spring
38. Sear pin
39. Sideplate
40. Hammer bolt nut
41. Receiver
42. Magazine
43. Barrel



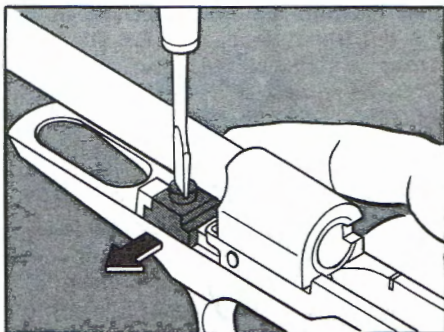




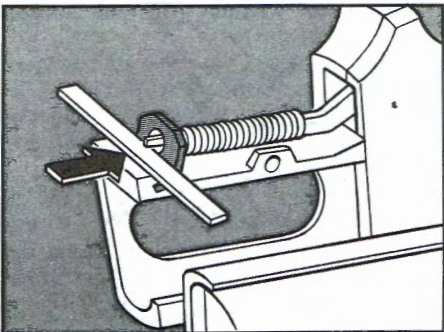
**1** To field-strip the CZ Model 50, first remove the magazine (42) and clear the chamber. While pressing the takedown catch (35) to the left, pull the slide (1) back and lift it upward at the rear. Then ease the slide forward off the barrel (43) and remove the recoil spring (10).



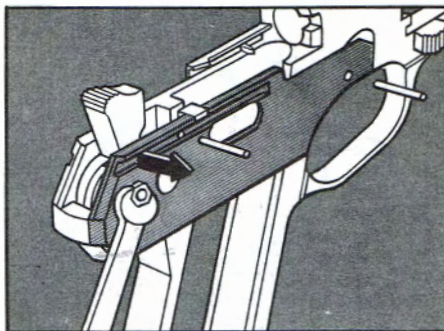
**2** Hold the slide bottom side up in a vise. Depress the firing pin lock (9) with a punch and use a long thin punch from the front to push the firing pin (7) out. After the firing pin lock and spring are removed, drive out the extractor pin (2), and remove extractor (6), extractor spring (5), and cartridge indicator (3).



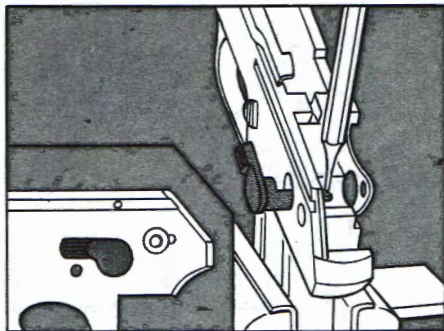
**3** Push the takedown catch all the way to the left, and unscrew the takedown catch screw (34). In doing this, a screwdriver with a thin shank is required to clear the barrel. After removing the screw, take out the catch and spring to the right. The hold-open latch and ejector (12) and latch spring (11) can be removed by driving out the hold-open hinge pin (13) to the left. Do not remove these unless necessary.



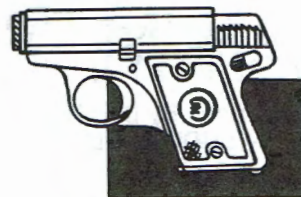
**4** Before attempting disassembly of the lock mechanism, remove the grip screw (15) and grips (14) (27). Then carefully clamp the receiver (41) in a vise with padded jaws. Place a thin metal bar against the bottom of the spring retainer (26), and push on the bar until the retainer is free of the receiver. Then ease the bar back to original position and remove the hammer spring (25) from the hammer strut (24).



**5** Continue disassembly of the lock mechanism by driving out the trigger pin (31) and sear pin (38), and use a small wrench to remove the nut (40) from the hammer bolt (19). Then push out the hammer bolt, lift the sideplate (39) from the receiver, and remove the trigger bar (28), trigger (30), hammer (23), and other lock parts.



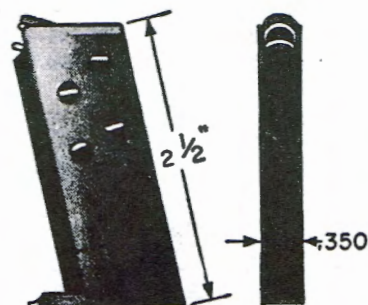
**6** After removing the hammer, push the safety (16) out to left without rotating. Take care not to lose the safety plunger (17) and safety spring (18). Reassemble in reverse. In replacing the safety, use a small punch to hold the safety plunger depressed. In replacing the hammer bolt nut do not use excessive force and strip the threads.



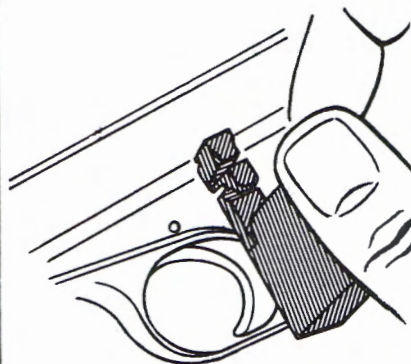
**CZ Model 1922  
Vest Pocket Pistol**

## PISTOL MAGAZINES

One of a series



The Model 1922 vest pocket pistol is one of a number of interesting cal. .25 pistols turned out by Ceska Zbrojovka, Czechoslovakia. A. S., Prague. Unusual in design, the gun resembles a common cal. .25 pistol style, but it has no true slide. Instead, a bolt operates in a tunnel-like section formed of sheet metal. The frame is made of stamped and formed sheet metal that is pinned to a core, a clever design from a production point of view, but the thin-walled frame can be damaged easily if the gun is dropped.



Like the rest of the gun, the magazine is well finished. The magazine floorplate is much heavier than normal and carefully pinned to the magazine walls. This is necessary because the floorplate is used as a takedown tool. Slide and barrel are retained by a square cross key. To disassemble the gun, this key must be pried out as shown. The front edge of the magazine floorplate is machined to a sort of screwdriver point to do the job.—EDWARD J. HOFFSCHMIDT



# DAN WESSON MODEL W-12 REVOLVER

Illustrations By DENNIS RIORDAN  
Text By LUDWIG OLSON

WHEN viewed casually, the Dan Wesson Model W-12 cal. .357 Magnum revolver appears to be of conventional double-action, swing-out-cylinder design. It is unusual, however, in that its barrel can be quickly and easily interchanged with one of different length. The grip also can be readily interchanged with one of different shape and size.

This versatile solid-frame revolver is produced by Dan Wesson Arms which was organized in 1968 at Monson, Mass. Daniel B. Wesson, who is presi-

dent of the firm, is a great grandson of Daniel B. Wesson, founder of Smith & Wesson, Inc. Dan Wesson Arms, however, is not associated with Smith & Wesson.

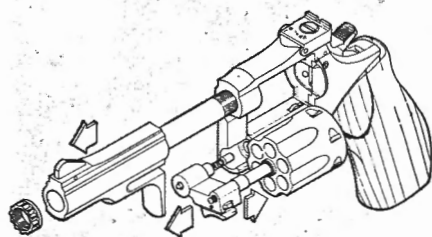
Barrels of six-inch; four-inch, or 2½" lengths are available for the model W-12. To interchange them, the revolver is unloaded, and a combination tool furnished as an accessory is used to unscrew the barrel nut. After the barrel nut and shroud are removed, the barrel is unscrewed by hand. When installing a replacement barrel, a shim gauge provided with the revolver is used to obtain proper clearance between the barrel and cylinder.

One-piece walnut grips of target,

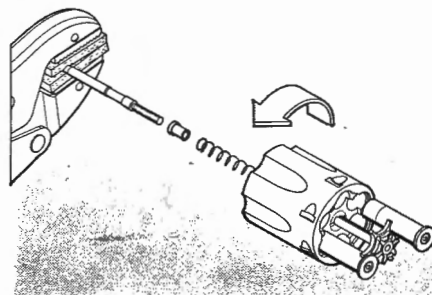
combat, or Michigan styles are available. The latter was designed by two Michigan State Police officers. Also available is an inletted walnut blank for those who want to shape their own grip. The combination tool is used to turn the grip screw.

The cylinder swings out to the left on a crane in the usual manner, but the latch is forward of the cylinder instead of to the rear. Pushing the ejector rod ejects all cartridges or fired cases simultaneously. The ejector rod is protected from injury by the barrel shroud—a highly desirable feature.

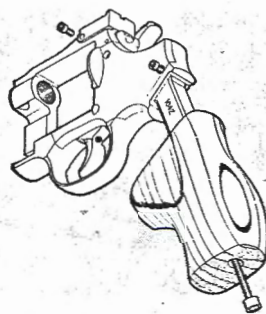
A firing pin connector, which is pivoted on the trigger, transmits the hammer blow to the firing pin. When the



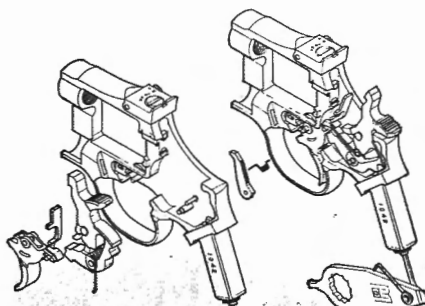
**1** Before attempting disassembly, unload cylinder (50), and lower hammer (27). Use Wesson combination tool (or 5/8" double-hex box wrench) to unscrew and remove barrel nut (19). Slide off shroud (3), and unscrew barrel (20). Depress latch (22), and swing out crane (24) and cylinder. Pull cylinder-crane assembly forward from frame (18), and detach cylinder from crane. This is sufficient takedown for normal cleaning.



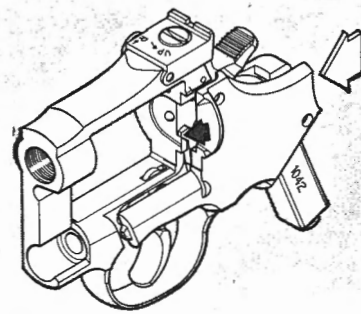
**2** To disassemble cylinder parts, clamp knurled tip of ejector rod (48) between wooden blocks in vise or locking-jaw pliers. Insert two empty cartridge cases in opposite chambers, and use cases to unscrew cylinder from rod. This releases extractor (52), ejector rod bushing (49), and ejector spring (51).



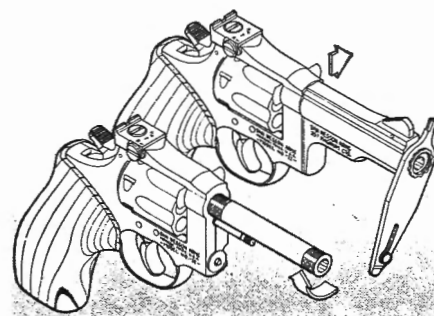
**3** Hole in underside of grip (34) gives access to grip screw (33). Remove screw with combination tool (5/32" Allen wrench), and pull grip downward from frame spike. Unscrew and remove sideplate screws (42) (47) with combination tool (5/64" Allen wrench). Lift sideplate (46) carefully; hand (35) is under spring tension and is easily displaced.



**4** Unhook hand spring (39) from groove in rear of hand, and remove hand and spring. Cock hammer. Then tighten long sideplate screw into mainspring guide (44), through hole at bottom of frame spike. Pull trigger (40), and lower hammer with thumb. Draw long arm of trigger return spring (43) outward from trigger, and allow it to arc downward until the tension is relieved. Trigger and firing pin connector (25), hammer, trigger spring, and bolt (38) can then be lifted from frame.



**5** Assemble in reverse. Stub arm of trigger spring must be positioned to rear of frame-mounted hammer pivot pin. Install hand spring with shorter arm bearing on forward surface of firing pin connector and longer arm hooked into hand groove. Maintain fingernail pressure against tip of hand to prevent its escape while replacing sideplate. Hold sideplate flat against frame and slide forward into place.



**6** Clean barrel threads, rear barrel face, and forward face of cylinder before adjusting clearance. Place .006" shim gauge on cylinder face, and screw barrel inward until a very light drag is felt on shim, just enough to hold shim in position. Install shroud and barrel nut with shim in place, rechecking clearance after barrel nut has been tightened.

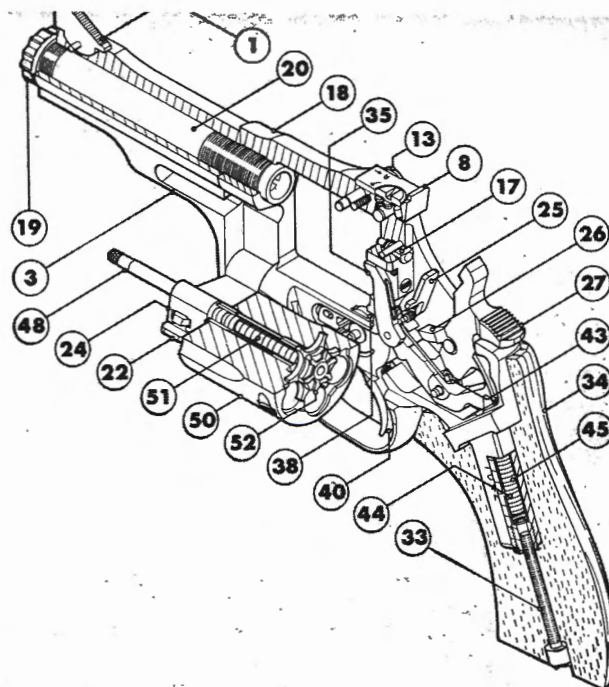


trigger moves forward, the connector is lowered out of line with the firing pin so that a blow on the hammer will not cause the gun to fire. This safety feature—not new—is simple and efficient.

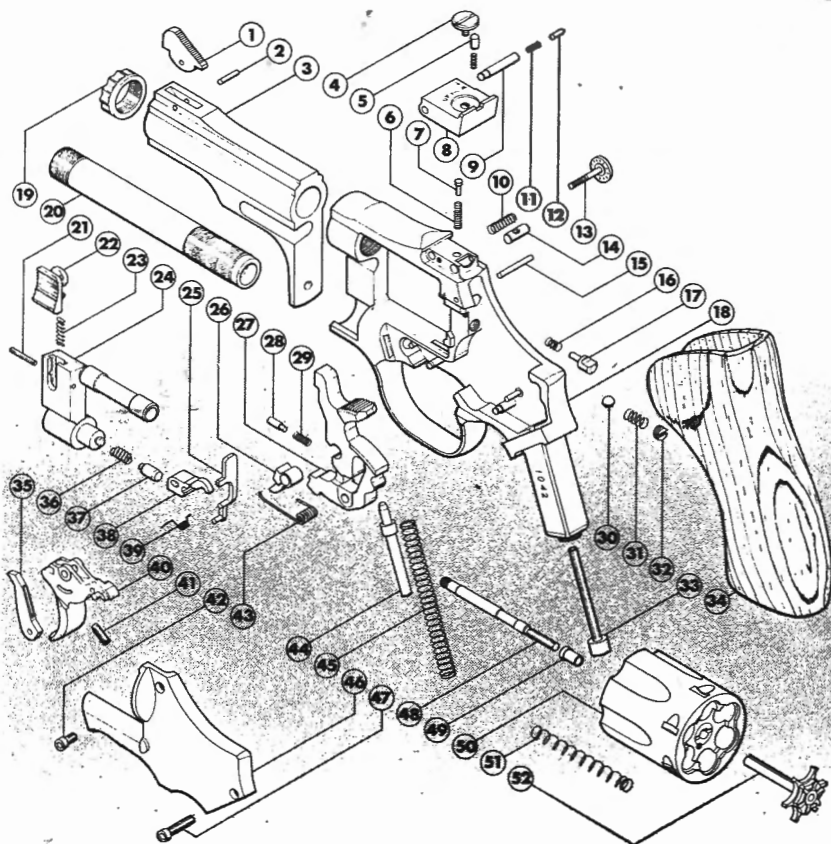
All springs in the Model W-12 are of piano wire which is noted for durability. Metal parts are steel with most exposed surfaces highly polished and blued. Hammer, trigger, and top of frame and barrel shroud rib have a matte finish.

Well designed, the sights consist of a fully-adjustable square-notch rear and Baughman quick-draw front. Windage and elevation adjustment screws in the rear sight have slots wide enough to accept a dime.

This revolver has sufficient weight to give good handling qualities for target shooting. Its balance is excellent with any of the three different barrels fitted.



Cutaway indicates relative position of assembled parts. Cylinder is shown opened, hammer at full cock. Parts are number keyed to parts legend.



#### Parts Legend

- |                              |                           |
|------------------------------|---------------------------|
| 1. Front sight               | 25. Firing pin connector  |
| 2. Front sight pin           | 26. Strut                 |
| 3. Shroud                    | 27. Hammer                |
| 4. Elevation screw           | 28. Strut plunger         |
| 5. Elevation click plunger   | 29. Strut spring          |
| 6. Elevation tension spring  | 30. Cylinder aligning     |
| 7. Elevation tension plunger | 31. Aligning ball spring  |
| 8. Rear sight body           | 32. Aligning ball screw   |
| 9. Hinge pin                 | 33. Grip screw            |
| 10. Windage tension spring   | 34. Grip                  |
| 11. Plunger spring (2)       | 35. Hand                  |
| 12. Windage click plunger    | 36. Bolt spring           |
| 13. Windage screw            | 37. Bolt plunger          |
| 14. Elevation nut            | 38. Bolt                  |
| 15. Firing pin retaining pin | 39. Hand spring           |
| 16. Firing pin spring        | 40. Trigger               |
| 17. Firing pin               | 41. Trigger stop screw    |
| 18. Frame                    | 42. Sideplate screw       |
| 19. Barrel nut               | 43. Trigger return spring |
| 20. Barrel                   | 44. Mainspring guide      |
| 21. Latch retaining pin      | 45. Mainspring            |
| 22. Latch                    | 46. Sideplate             |
| 23. Latch spring             | 47. Sideplate screw       |
| 24. Crane                    | 48. Ejector rod           |
|                              | 49. Ejector rod bushing   |
|                              | 50. Cylinder              |
|                              | 51. Ejector spring        |
|                              | 52. Extractor             |





# DERINGER POCKET PISTOL

By JAMES M. TRIGGS

**H**ENRY DERINGER, JR., of Philadelphia, Pa., began manufacture of his famed single-shot muzzle-loading percussion pocket pistols in 1825 and limited production continued even after his death in 1868, when the firm was operated for a time by a son-in-law, Dr. Jonathan Clark.

However, the demand for all types of percussion pistols fell off sharply following the Civil War when the self-contained metallic cartridge came into common use. The Deringer was but one of many erstwhile popular percussion arms doomed by this development. In its heyday, the Deringer pistol was favored by individuals from all walks of

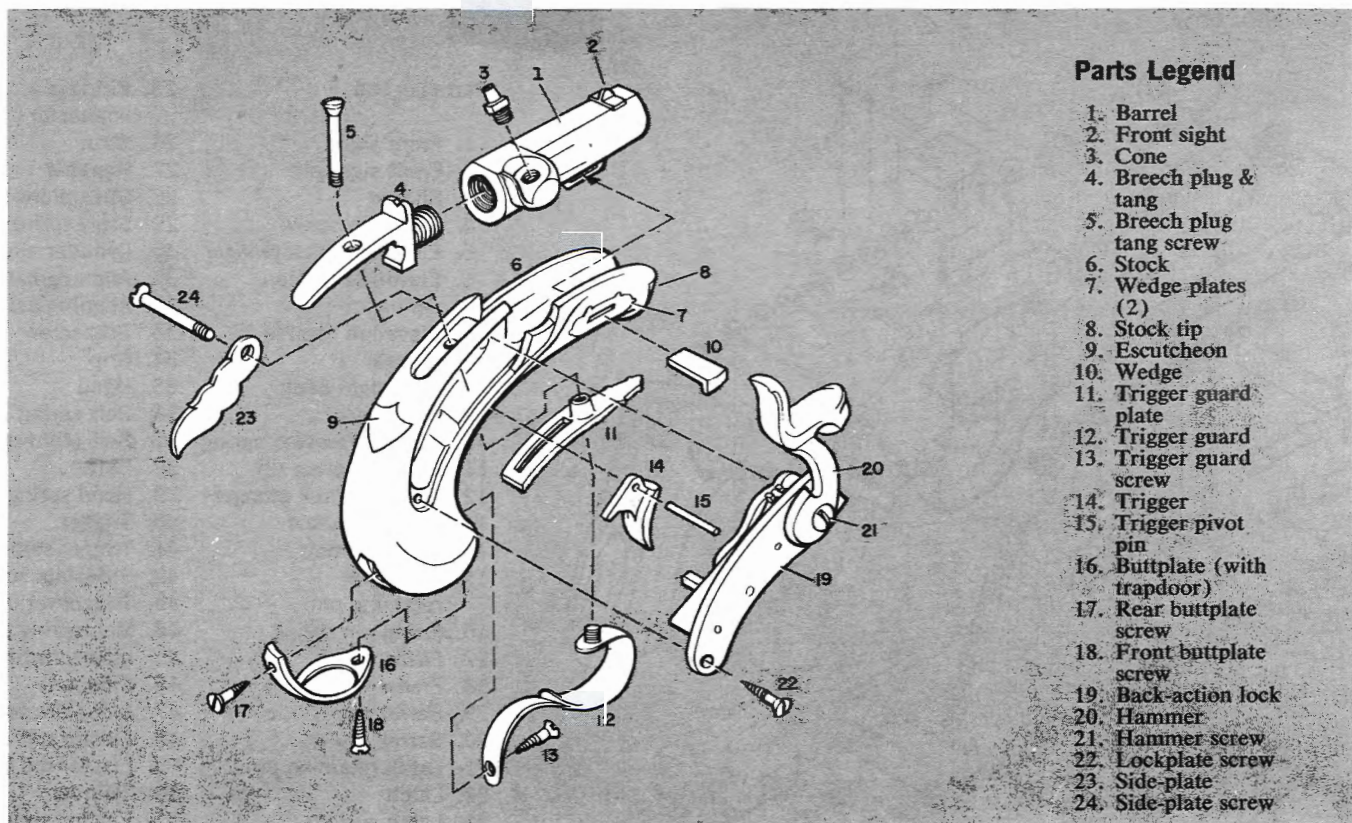
life who desired a powerful yet easily concealed handgun. It was made in several calibers from .33 to .51, and with barrels ranging in length from less than 1" to more than 4".

Commonly sold in matched pairs, the genuine Deringer pistols had rifled barrels of wrought iron. Some were fitted with single-set triggers. The 2-line trademark DERINGER PHILADEL<sup>A</sup> was invariably stamped on the lockplate and breech. These pistols were not serially numbered, but the various parts were stamped with matching assembly numbers or letters. Like most well-made products, the Deringer pistols were subject to counterfeiting and some of this

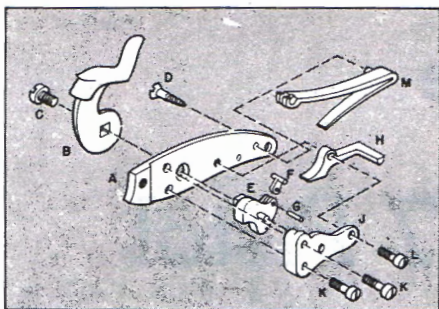
was done by former employees of the Deringer firm. This resulted in litigation successful to Deringer, but the fact remains that the word Deringer (or Derringer) is today a proper noun commonly applied to any easily concealable short barrel pocket pistol of non-automatic type.

Deringer pistols figured in many notable homicides, the most famous being the assassination of President Abraham Lincoln by John Wilkes Booth.

The full story of the Deringer pistol is given in the book entitled *Henry Deringer's Pocket Pistol*, by John E. Parsons, published in 1952 by William Morrow & Co.

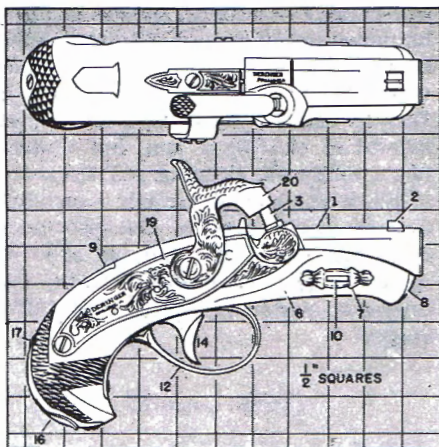






**1** The conventional back-action lock is easily disassembled after removal from the stock. The lower end of the V main-spring (M) bears directly on the sear (H) and no sear spring is employed.

- |                         |                      |
|-------------------------|----------------------|
| A) Lockplate            | F) Stirrup           |
| B) Hammer (20)          | G) Stirrup pin       |
| C) Hammer screw (21)    | H) Sear              |
| D) Lockplate screw (22) | J) Bridle            |
| E) Tumbler              | K) Bridle screws (2) |
|                         | L) Sear screw        |
|                         | M) Mainspring        |



**2** The scale drawing shows right side and top detail of the assembled Deringer pistol and is a reference in identifying genuine H. Deringer pistols of this type. Minor variations in style of engraving occur; however, the engraving shown is most typical of this arm.

### Disassembly Procedure

Place hammer (20) at half-cock position and unscrew side-plate screw (24) from left side of stock. Unscrew lockplate screw (22) and tap left side of stock gently to loosen lockplate. Lift lock assembly out right side of stock. To remove barrel (1), drift wedge (10) out of stock. Unscrew breech plug tang screw (5) and lift barrel and breech plug assembly up out of stock. Trigger guard (12) and plate (11) can be removed from underside of stock after removing trigger guard screw (13). Trigger (14) is removed by drifting trigger pivot pin (15) out of stock. Buttplate is removed by unscrewing rear and front buttplate screws (17 & 18).

Removal of wedge plates (7), stock tip (8), escutcheon (9), and side-plate (23) from stock (6) is not recommended. Reassemble in reverse order.

## Watch Out For The Old Ones

**T**HE 10% margin between shootability and absolute safety of a muzzle-loader is what anyone who uses the old ones has to look out for. It's the 10% that can injure you, put a hole in your wall, or convert a nice fireplace decoration into scrap iron.

Outside of the cardinal rule on *all* guns—never load 'em in the house—I'd say there were two primary rules of safety for muzzle-loaders, and one for any old cartridge weapon outside of the bolt-actions.

### Number one rule on muzzle-loaders

A muzzle-loader can look like a prime shooter in all respects and have a breech rusted tissue paper thin.

The job is a nuisance and a headache, but always pull the breech plug on an untried weapon. This automatically catches two of your worst hazards, a dangerously rusted breech and an old load. I speak as one with a 6" hole in the wall of my house, caused by an 1857 musket that had been in my possession since childhood, and had just the night before yielded a pedigree paper from the barrel which stated it had been hung on the wall for the last time in 1880, but neglected to mention it had been hung up with a shot load in it. You think blackpowder isn't effective that long—hah! All that saved me from a tragedy during my childhood with this gun was that I had never cleaned out the percussion nipple in the years I shot it with match heads, paper caps, and so forth.

### Number two rule

Don't believe the wise guy who says it's impossible to overload with blackpowder; even some gunsmiths will tell you this.

The rule of thumb on covering your ball with powder is OK, but it's much better to get an old proof chart for your particular caliber or gauge and weigh the load, then make a container which will hold this much.

A sensitive area on overloads is the wood around the tang, where greatest recoil pressure occurs. An old stock, with wood dead and dried out over the years, can quite easily splinter in your face under too much stress.

Personally I'm enough of an old lady that I check all my stuff by remote control the first few times. The setup consists of a weighted box with a padded notch on one side, though an old tire casing will also do. The box or tire is set on the ground in a safe area, and a couple of stakes driven into the ground, à la artillery, to keep it from skittering all over the landscape. The trigger is pulled from several feet away by a string. Chances are, if your weap-

on doesn't come apart at the seams in two or three test shots, she's OK.

Almost as annoying as an overload, though usually not as dangerous, is a damp load. If you violate the number one rule and store your muzzle gun loaded in the house, it may take on moisture between one usage and the next, with the result that the next time you shoot it, all you get is a hissing like a basketful of snakes, and your bullet may go a quarter of the way up the barrel and lodge there. You can spend a happy time either pulling the breech plug and cleaning out the fizzled load, or trying to pick it out from the muzzle end. So even outside the safety consideration, if you finish your day's shooting with a load in, get rid of it.

And a final word on muzzle-loaders. Don't play cute games with blank loads, as I have known people to do at celebrations. That wad comes out with enough energy to injure someone or at least put a hole in the wall or ceiling.

### Cautions with cartridge arms

Number one rule for old cartridge weapons is *watch that firing pin*. Outside of bolt-action weapons, few of your older guns had any positive means for retraction of the firing pin.

So what happens? The firing pin gets worn or flat on one side, and starts to stick. One day out on the range you don't notice it and close the action and an 'accidentally' fired slug plows up the ground a few feet ahead of you. Often a 'slam fire' like this occurs, *before* the breech is thoroughly locked, which with the bigger stuff can be doubly dangerous. Safest bet is to *always* check the position of the firing pin before closing the action.

The old falling-blocks, by the nature of their breech closure, were built with very tight actions, and in rimfire calibers it is possible to fire them accidentally by trying to force the block up against or across the rim of a cartridge that has not chambered properly. While you can expect a fair amount of friction on this type of action, if you have to make a deliberate effort to close the block—don't. Look for the trouble first. A protruding firing pin may be catching on the lower rim of the cartridge and keeping the block from going up any further.

Trying to force it up with a sharp rap on the lever, as annoyance may cause you to do, is an almost sure way to get a 'slam fire'. If you want to check a weapon, do it outdoors.

Guns can be fun, properly handled. And also deadly. That's true of any gun, but in particular, watch out for the old ones.—H. C. GOBLE





# Dreyse

## Model 1907 Pistol

By E. J. Hoffschmidt

**T**HERE was a period in Germany when any schoolboy could tell you that Nikolaus von Dreyse invented the famous Prussian needle gun. Though he died in 1867, his name was revered up through World War I and numerous guns designed long after his death carried his name. One is the Schmeisser-designed Dreyse Model 1907 pistol, manufactured by the Rheinische Metallwaren und Maschinenfabrik of Soemmerda, Germany.

The Dreyse is an awkward pistol, due in part to the fact that it was developed near the beginning of the automatic pistol era. A few years after

the gun was first marketed, Europe was swamped by the 1910 series of Browning, Mauser, Sauer, and Walther pocket pistols. The better designs of these weapons soon overshadowed the Dreyse. Although it was manufactured up to World War I, the Model 1907 was superseded by the Rheinmetall pistol after World War I. During the short time it was in production, numerous machining changes were made. Around 1912 the gun was re-designed and scaled up to handle the 9 mm. Luger cartridge. The 9 mm. pistol was used to a limited extent during World War I, but the German

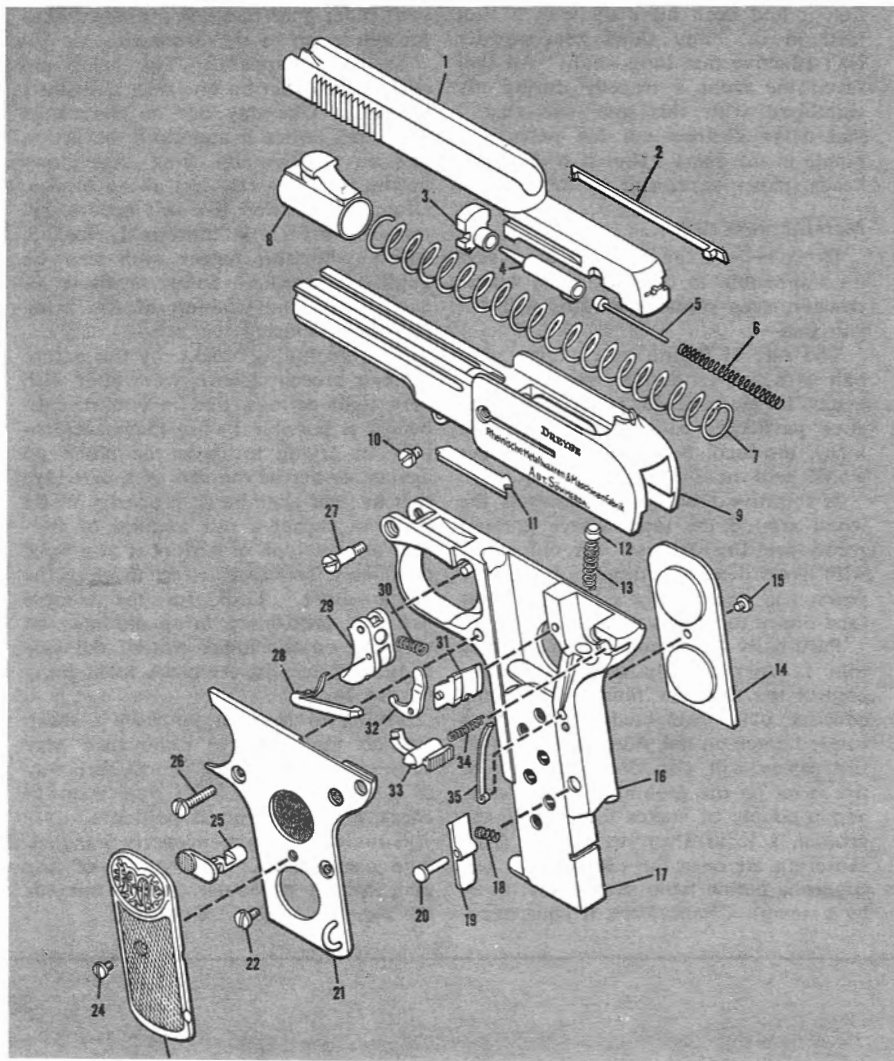
Army never liked a blow-back-operated gun for such a powerful cartridge.

Although the grip design and general outline of the Model 1907 leave a great deal to be desired, it has a few interesting features. The most notable is the frame design. Unlike most common automatics, the sear mechanism can be inspected by removing a large side-plate. The frame is hinged and can be tipped up by moving a button at the back of the receiver. This action does not expose the barrel as in the Smith & Wesson and Le Francais pistols. It is helpful in clearing a jam, but it does not simplify the cleaning problem.

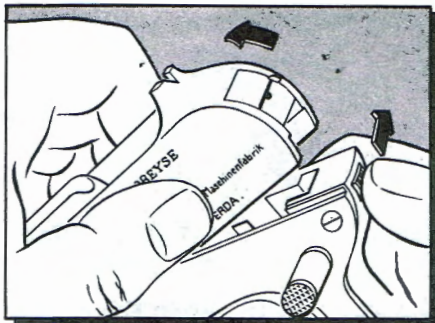
When the gun is cocked, a pin that can be easily seen or felt protrudes from the end of the slide. In spite of its seemingly complicated exterior, the operating parts are simple and fairly rugged.

### Parts Legend

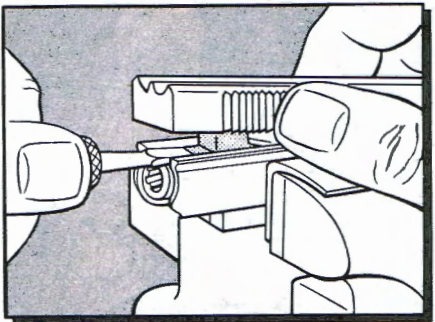
1. Slide
2. Ext. actor
3. Bolt head
4. Firing pin
5. Cocking indicator
6. Firing pin spring
7. Recoil spring
8. Recoil spring follower
9. Barrel extension
10. Ejector screw
11. Ejector
12. Sear spring cap
13. Sear spring
14. Right grip
15. Grip screw
16. Frame
17. Magazine
18. Magazine catch spring
19. Magazine catch
20. Magazine catch pin
21. Side-plate
22. Side-plate screw
23. Left grip
24. Grip screw
25. Safety catch
26. Side-plate screw
27. Hinge screw
28. Trigger bar
29. Trigger
30. Trigger spring
31. Sear
32. Disconnecter
33. Frame latch
34. Frame latch spring
35. Safety catch spring



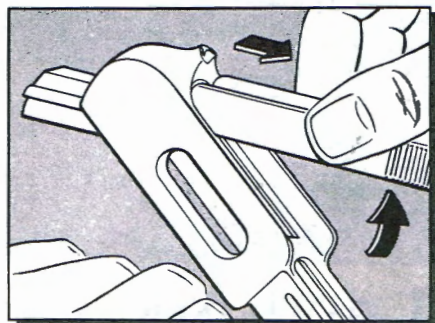




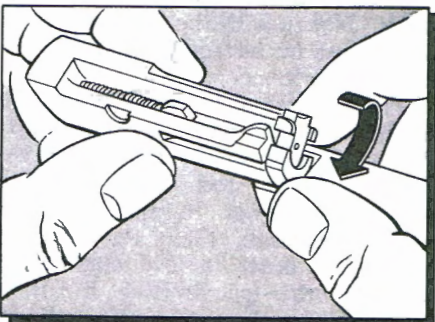
**1** To disassemble: Remove magazine and clear chamber. Open action by pushing frame latch (33), on end of frame, to right and lifting up barrel extension (9) as shown. The gun will not come apart as it is hinged by a screw above the trigger guard



**2** To avoid injuring knuckles it is best to clamp barrel extension of pistol in vise to simplify removal of slide. Depress recoil spring follower (8) with blade of small screwdriver until lug on follower clears notch in slide. Lift up serrated end of slide as shown, then ease follower off barrel, remembering it is under extremely heavy spring tension



**3** After recoil spring follower (8) and recoil spring (7) have been removed, push slide back as far as possible. Lift serrated portion and slide it free of barrel extension



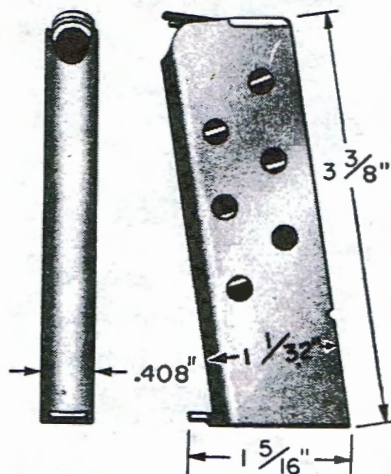
**4** To remove firing pin (4) first lift out extractor (2), then rotate bolt head (3) as shown until rounded portion is free of retaining cut in slide. It may be necessary to tap the bolt head with a soft hammer to start it ■



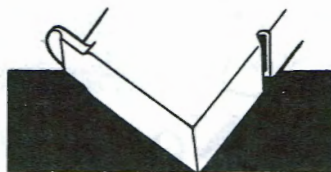
**Dreyse  
Model 1907  
.32 cal. Auto**

## PISTOL MAGAZINES

One of a series



.32 caliber Dreyse pistols are a drug on the market. The gun's weird outline and lack of outstanding features have made it unpopular in America. It has an awkward grip and very high sights, making the gun difficult to shoot with any accuracy. Actually, it is made of excellent materials and usually well-finished. Most of the guns in this country are World War I souvenirs which had been issued as sidearms to special German troop units.



The tip of the magazine floorplate is the best clue to the identity of a Dreyse magazine. This tip is machined to a thinner cross-section as shown in the illustration. The other obvious clue is the magazine latch notch cut into the backstrap.



The follower is stamped from sheet steel and resembles that of other common magazines but the feed lips are somewhat weaker than most, since the wide bolt clearance notch at the top of the backstrap does not leave any metal for support.—E. J. HOFFSCHMIDT.

## Try It This Way

### Enfield 'ears'

After Enfield 'ears' have been sawed off, the receiver bridge can be finish ground in the lathe. Turn a tapered mandrel to fit the chamber and the rear of the receiver opening, with a center hole in the end. Chuck the barrel and receiver in the lathe, supporting the outboard end with the tailstock center. Rotate the chuck back and forth by hand while feeding the tool post grinder longitudinally. This grinds a round receiver bridge on which conventional sights will fit. Grind to same diameter as receiver ring.—HENRY A. DAVIS

### Removing walnut stain

To take off the walnut stain often left on the hands after stock refinishing, first wash hands with soap and water. Then work full-strength laundry bleach into the hands, and rinse them in clear water.—ROBERT R. WILMARTH

### Crowning barrel muzzles

In crowning muzzles by the brass ball and abrasive method, chuck ball in electric drill and clamp drill in vise. With drill running, hold muzzle on brass ball with one hand and with the other hand rotate breech of barrel in circles corresponding to the size of ball being used.—V. L. THOMASON

### Correcting headspace

Available cases showed markedly excessive headspace in my 6.5 Jap rifle, as estimated with shims between case head and bolt. To correct this, I first flared the case mouths with a tapered nail set, to hold them back to the bolt by friction. Then I fired them with a load of 9 grs. Bullseye, case filled to mouth with cornmeal and a card wad (no bullet). The cases then showed a very good fit with little headspace.—O. F. RANKIN

### Gas fireplace fire

I have found the gas jet installed in my fireplace for starting fires, provides perfect heat for small forging and casehardening operations. I set the work on an ordinary brick during heating. The gas fire is also good for melting lead and antimony in bullet casting.—R. W. HEINZ

### Fitting Trigger Shoe

Perfect fit between trigger and trigger shoe is obtained by forming a wire template against slot in shoe and then holding it against trigger to note high spots in slot which must be filed away.—R. L. BRADLEY

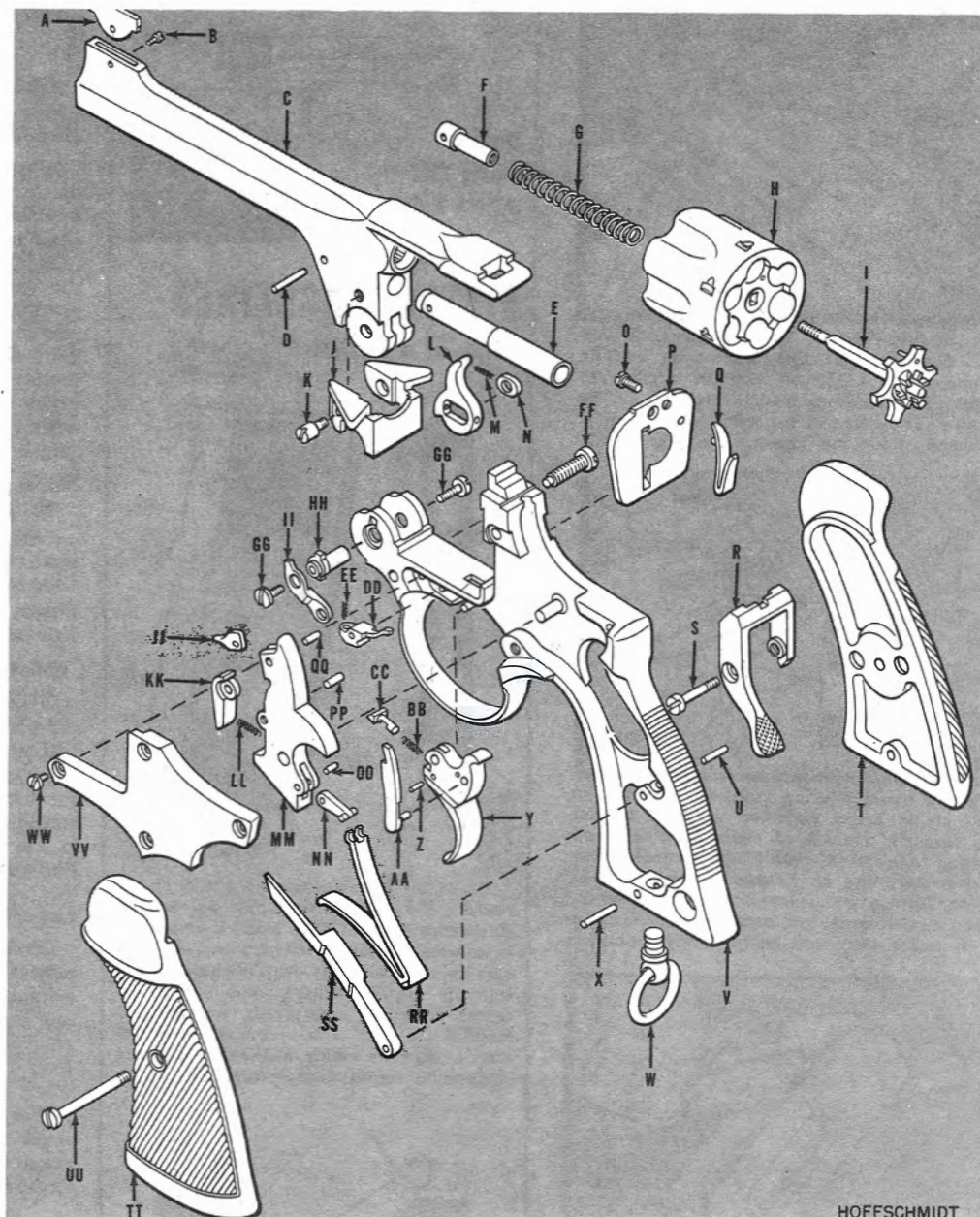
### Use of plastic bedding

In plastic-bedding an action, the holes and recesses in the receiver must be filled beforehand to keep the plastic from locking the action into the stock. A stiff dough, mixed as dry as possible with water and flour, is easy to pack into the holes, and separates perfectly from stock and action after the job is done.—J. C. THOMPSON



## LEGEND

A—Front sight blade  
B—Front sight screw  
C—Barrel  
D—Axle retaining pin  
E—Cylinder axle  
F—Extractor nut  
G—Extractor spring  
H—Cylinder  
I—Extractor  
J—Cylinder retaining cam  
K—Cylinder cam screws  
L—Extractor lever  
M—Extractor lever spring  
N—Extractor lever roller  
O—Recoil plate screw  
P—Recoil plate  
Q—Barrel latch spring  
R—Barrel latch  
S—Barrel latch screw  
T—Right-hand grip  
U—Mainspring lever pin  
V—Frame  
W—Lanyard ring  
X—Grip pin  
Y—Trigger  
Z—Stop operating catch pin  
AA—Hammer  
BB—Stop operating catch spring  
CC—Stop operating catch  
DD—Cylinder stop  
EE—Cylinder stop spring  
FF—Cam lever screw  
GG—Hinge pin screw  
HH—Hinge pin  
II—Cam lever  
JJ—Hammer nose  
KK—Hammer catch  
LL—Hammer catch spring  
MM—Hammer  
NN—Hammer swivel  
OO—Hammer swivel pin  
PP—Catch retaining pin  
QQ—Nose retaining pin  
RR—Mainspring  
SS—Mainspring lever  
TT—Left-hand grip  
UU—Grip screw  
VV—Sideplate  
WW—Sideplate screw



# Enfield Revolver No. 2 Mk 1 and Mk 1\*

By E. J. Hoffschmidt

A CONTROVERSY has raged for many years—which is the better military handgun, the automatic (autoloading) pistol or the revolver? This argument will not be rehearsed here, but it is sufficient to say that the British army in the past has sworn by the revolver. In spite of the fact that every other major world power uses an automatic pistol, the British stick by their No. 2 Mk 1 and Mk 1\* (Mark One Star).

Enfield No. 2 revolvers were adopted to replace the heavy .455 caliber revolver No. 1 Mark VI. The fact that the No. 2 pistols are chambered for the .38 S&W cartridge (they call it caliber .380) indicates that the British have abandoned the old .455 'Empire-builder', because figures indicate the .38 S&W, using a

200-grain bullet, is almost as good a manstopper as the .455. British revolvers have proven their worth in two world wars and innumerable 'police actions'.

Revolvers No. 2 Mk 1 and Mk 1\* are basically the same gun. The only difference lies in the fact that the Mk 1\* has no hammer spur and must be fired double-action.

Webley & Scott Mark IV revolvers are often mistaken for Enfield No. 2 revolvers. They actually are quite different, both in design and in method of manufacture. While both were used during the last war, Enfields were made at the government arsenal at Enfield, and the Mk IV revolvers were manufactured by Webley & Scott Ltd., Birmingham. Even though the guns look

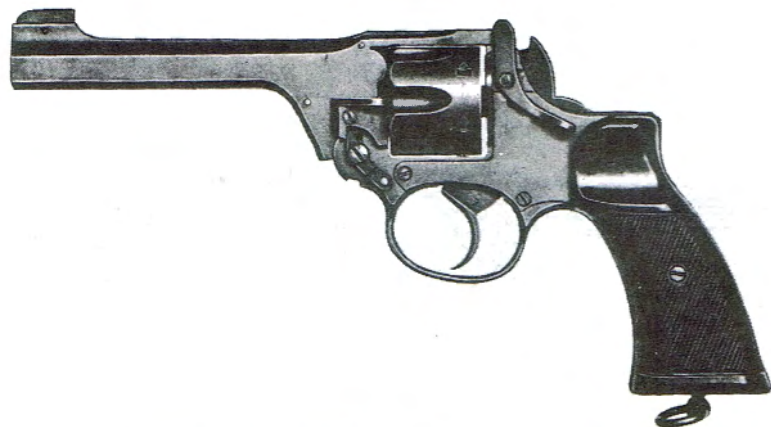
a great deal alike, the Enfield is the simpler of the two from a repair point of view. By removing the sideplate, you can study the operation of the innards. Not so with the Webley, as the parts must be installed through openings in the frame.

The majority of the Enfield revolvers in this country have a war-time finish. Plenty of tool marks show, but the quality of the steel was maintained throughout the war. In spite of the awkward appearance, these top-break revolvers are faster to load and extract than any other type revolver. But there are one or two drawbacks. The cylinder can be knocked out of alignment if the gun is dropped in open position.

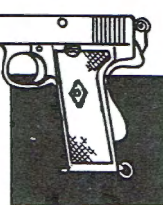
Another point to remember is not to close the gun with the hammer at full cock, for in this position the hand is sticking out of the frame and might be damaged by the ratchet. ♦ ♦ ♦

E. J. HOFFSCHMIDT is an artist-illustrator with years of experience with firearms.



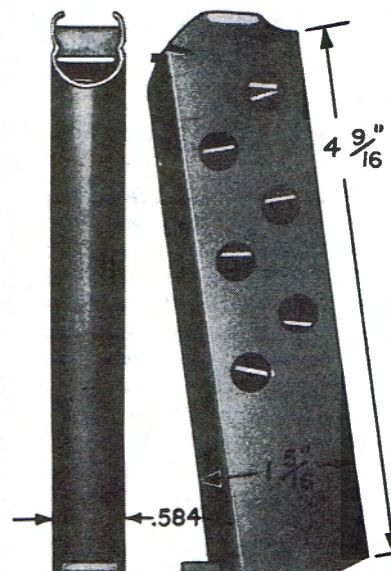


**Webley & Scott  
Self-Loading Pistol  
Mark I 1913**

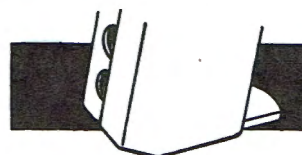


## PISTOL MAGAZINES

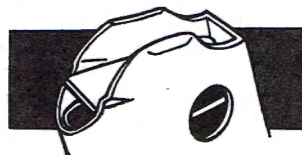
One of a series



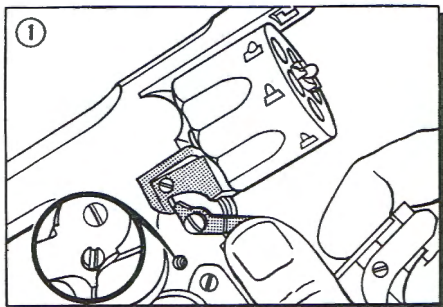
The design of Webley & Scott pistols may be a bit awkward by modern standards, but they are well made of the best materials. The cal. .455 Mark I 1913 pistol is a fairly common example. It has a man-sized grip and a business-like appearance.



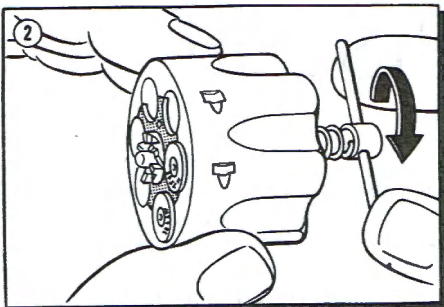
According to official British publications, the Mark I magazine was manufactured with 2 locking notches so that the pistol could be used as a single-loader with the full magazine held in reserve. The half-moon notches and the clipped off floorplate are distinctive features.



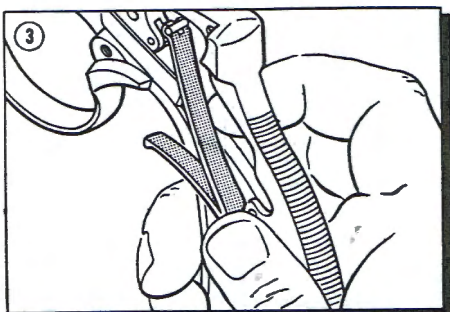
The oddly shaped lips also identify this big magazine. The backstrap is cut away so the magazine will clear the slide hold-open, which is held out of action with cartridges in the magazine.—E. J. HOFF-SCHMIDT



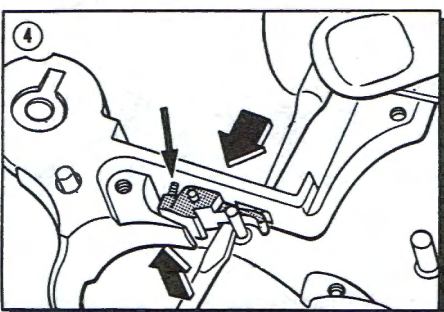
The first point in stripping the No. 2 revolver is to remove the cylinder (H). Remove the cam lever screw (FF). The screw slot is wide enough for a coin. Open the gun as far as it will go and push up on the cam lever (II) as shown. Lift the cylinder off the axle



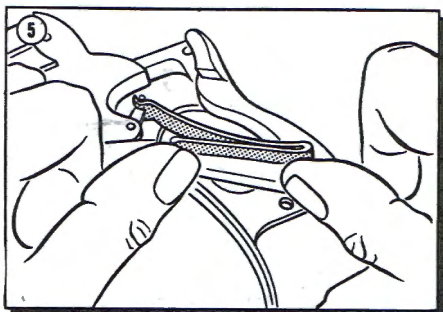
Before removing the extractor (I), put a few empty cartridges in the cylinder (H) to prevent the tiny locating pin from shearing off. Run a nail or punch through the hole in extractor nut (F) and unscrew it as shown. Lift out the extractor (I) and extractor spring (G)



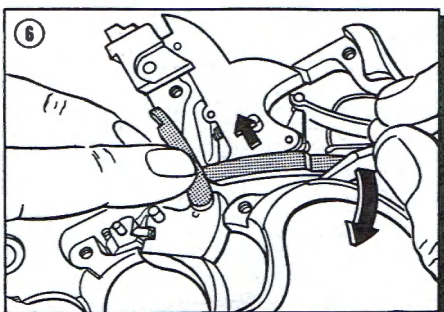
After the barrel latch (R), the sideplate (VV), and the grips have been removed, the mainspring (RR) may be pushed out of its seat as shown and unhooked from the hammer swivel (NN). Needless to say, this should not be attempted with the hammer at full cock (Mk 1 only)



The only other delicate part in this gun is the cylinder stop spring (EE). Care must be taken not to deform it when removing the cylinder stop (DD). To remove the stop, it is necessary to depress it below the surface of the frame while prying it up off its pin

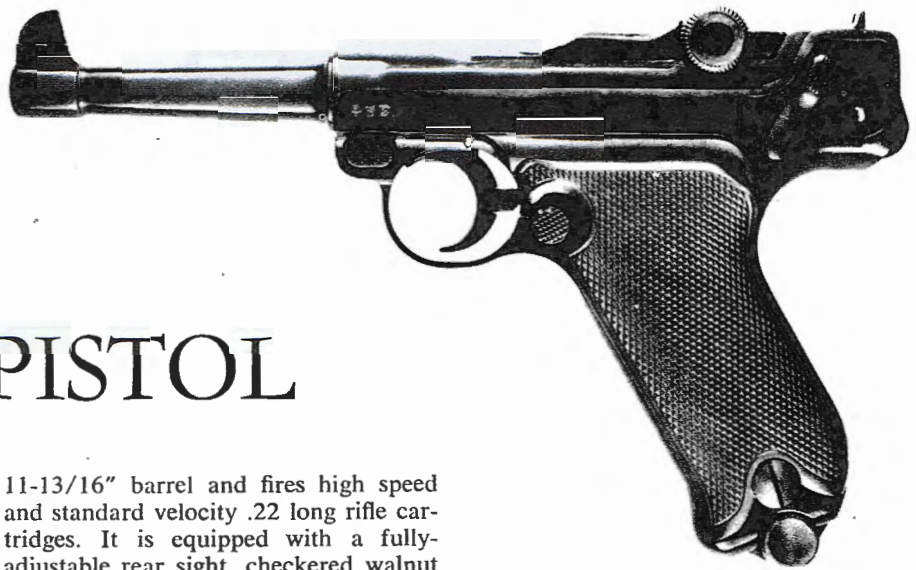


When re-assembling the gun, the mainspring is the only part that presents any difficulty. Squeeze the mainspring as shown. Insert the closed end into its seat in the frame. Then push the hammer swivel (NN) into its cutout in the mainspring (RR)



The hand (AA) is kept forward by the pressure of the mainspring lever (SS). To replace the hand (AA), it is necessary to pry the mainspring lever up until it is opposite its notch in the hand. Then push the hand in over the mainspring lever





# ERMA .22 PISTOL

By DENNIS RIORDAN

THE Luger pistol is extremely popular with both collectors and shooters. For many years, there was a demand for a cal. .22 rimfire version of this pistol, and between the World Wars the Erma-Werke in Germany introduced a .22 caliber Luger conversion unit. In 1964, Erma brought out a .22 pistol which has the same general appearance and size as the German Model 1908 9 mm. Luger. However, these pistols differ from each other mechanically and in several other respects.

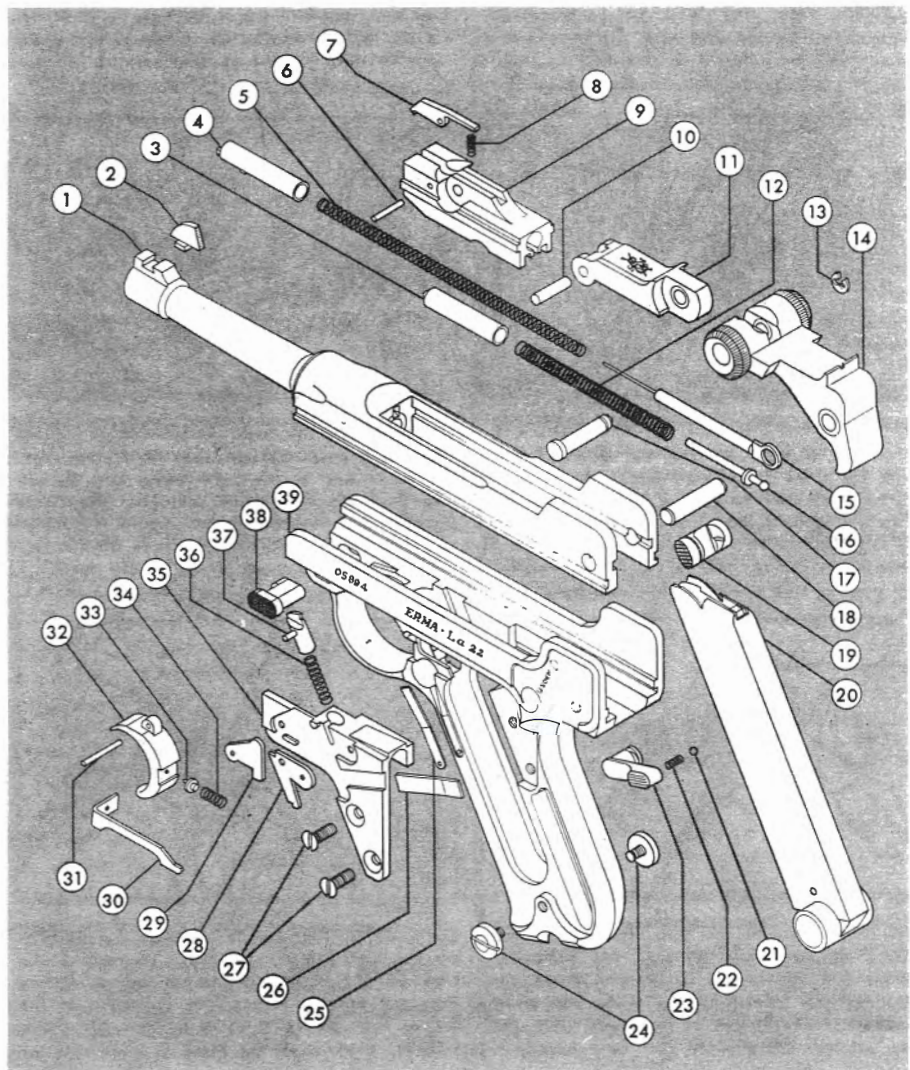
Chambered for the .22 long rifle cartridge, the Erma pistol weighs 36 ozs. and has a 4-9/16" barrel. Its toggle-joint breech mechanism resembles that of the Luger, but the barrel does not recoil. The toggle mechanism retards opening of the breech to some extent, and the pistol is thus of retarded-blow-back type.

A manual safety on the left of the frame is pivoted down for engagement. With the safety in this position, the word "GESICHERT" (safe) on the frame is exposed. The magazine holds 8 rounds, and can be removed by depressing the magazine catch on the left side behind the trigger. Many metal parts, including the frame, are die-cast non-ferrous alloy with black finish. The breechblock, barrel liner, and small parts are steel, and the grips are checkered brown plastic.

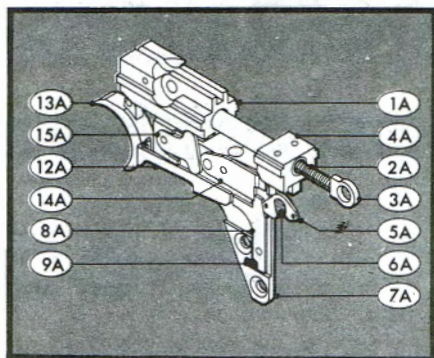
In 1967, a redesigned version of this pistol designated Model EP was introduced. It features checkered walnut grips and an improved trigger mechanism and firing mechanism. Unlike the older version made for use with high speed ammunition only, the improved pistol fires both high speed and standard velocity cartridges.

A long-barrel version of the Erma was also brought out in 1967. Called the Navy Model ET, this pistol has an

11-13/16" barrel and fires high speed and standard velocity .22 long rifle cartridges. It is equipped with a fully-adjustable rear sight, checkered walnut grips and fore-end, and the improved trigger mechanism and firing mechanism.

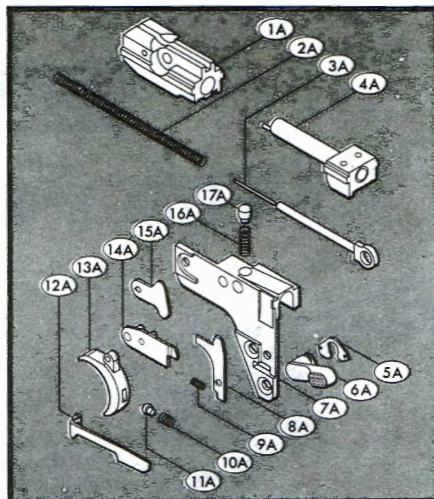




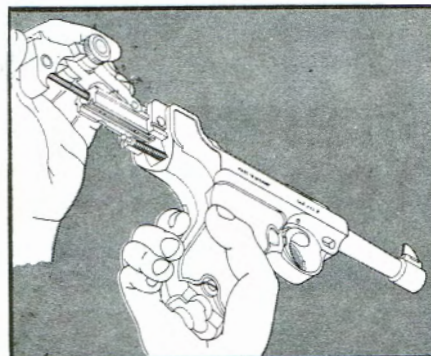


**Parts Used in Model EP and Navy Model ET Only**

- 1A. Breechblock
- 2A. Firing pin spring
- 3A. Ejector
- 4A. Firing pin assembly
- 5A. Safety ring
- 6A. Safety
- 7A. Sear housing
- 8A. Sear release
- 9A. Sear release spring



- 10A. Trigger bar plunger spring
- 11A. Trigger bar plunger
- 12A. Trigger bar
- 13A. Trigger
- 14A. Sear
- 15A. Disconnecter
- 16A. Sear spring
- 17A. Sear plunger

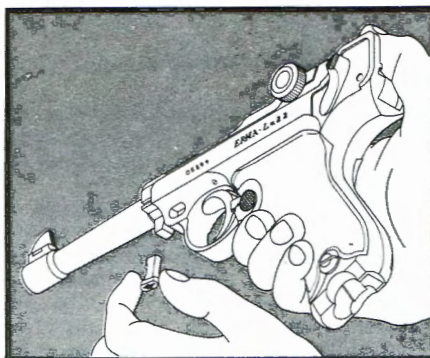


3. Remove toggle link and breechblock assembly to the rear. Take the recoil spring (12), recoil spring guide (16), and recoil spring sleeve (3) from rear of frame (39).

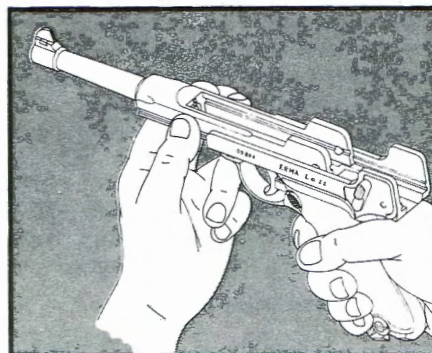
## PARTS LEGEND

- 1. Barrel and receiver
- 2. Front sight
- 3. Recoil spring sleeve
- 4. Firing pin
- 5. Firing pin spring
- 6. Extractor pin
- 7. Extractor
- 8. Extractor spring
- 9. Breechblock
- 10. Breechblock pin
- 11. Front toggle link
- 12. Recoil spring
- 13. Toggle axle lockwasher
- 14. Rear toggle link
- 15. Firing pin spring guide and ejector
- 16. Recoil spring guide
- 17. Toggle axle pin
- 18. Receiver axle pin
- 19. Magazine catch
- 20. Magazine
- 21. Safety ball
- 22. Safety spring
- 23. Safety
- 24. Grip screws (2)
- 25. Magazine catch spring
- 26. Safety bar
- 27. Sear housing screws (2)
- 28. Sear lever
- 29. Disconnecter
- 30. Trigger bar
- 31. Trigger pin
- 32. Trigger
- 33. Trigger plunger
- 34. Trigger spring
- 35. Sear housing
- 36. Sear spring
- 37. Sear
- 38. Locking bolt
- 39. Frame

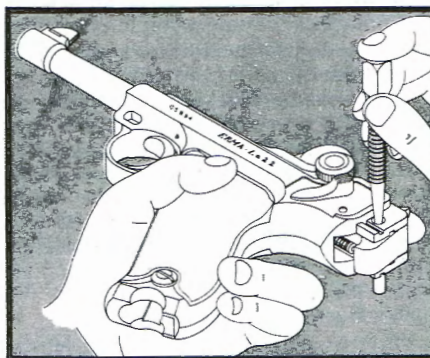
Note: Grips are not shown



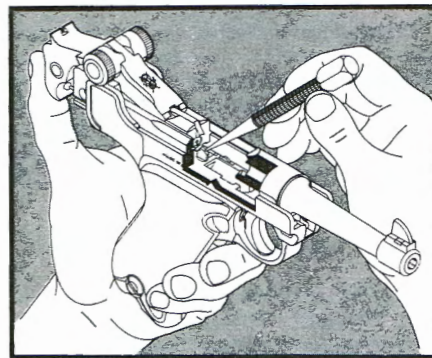
1. To field strip the Erma pistol, remove the magazine (20) and clear the chamber. Cock the pistol by pulling the rear toggle link (14) up and to the rear. Push the barrel and receiver assembly forward with the thumb as shown, and remove the locking bolt (38) to the left.



4. Slide the barrel and receiver (1) forward off the frame. Remove the firing pin spring (5), firing pin spring guide and ejector (15), and firing pin (4) from the breechblock (9). This completes field-stripping.



2. Release thumb pressure on rear toggle link, and allow the barrel and receiver assembly to spring rearward. Drift out the receiver axle pin (18).



5. Reassemble in reverse. In replacing the toggle link and breechblock assembly of the older-version pistol, depress tip of sear with a punch.



## EXPLODED VIEWS:

# The Feinwerkbau M-65

Text by CHARLES LANHAM  
Drawing by GEORGE LEES

**M**ANUFACTURED by Feinwerkbau Westinger & Altenburger G.m.b.H. of Oberndorf/Neckar, W. Germany, the FWB M-65 air pistol is favored by World Shooting Championship record holders. It was imported by Daisy from 1967 to 1978, but is currently handled by Beeman Precision Airguns of San Rafael, Calif.

Of complex design with fully adjustable sights and trigger, the FWB M-65 action is easily manipulated by a side lever. Two features permit the shooter to fire the gun with either normal air gun characteristics or the simulated characteristics of a cartridge gun. A quick-change trigger adjustment can give light or relatively heavy pulls at will, and a recoil stop can be activated to increase the felt recoil. Safety features prevent the gun from being discharged when the action is open.

### Disassembly Instructions

Make sure pistol is not cocked. Remove grip screws (78), grips (79, 80) and the two front grip attachment screws (77). With a short or ball-type 3 mm (.118") Allen wrench, remove both rear grip frame attachment screws (75) and lock washers (76). The grip frame (74) containing the trigger assembly may now be separated from the barrel and piston housing (1).

### Front Sight Assembly Removal

Clamp inverted barrel and piston housing (1) in a vise. The front sight base retaining pin (5) must be drifted off left to right. The front sight base (2) can now be pulled off to the front. In reassembly, be sure to insert the retaining pin (5) in reverse fashion to insure the front sight being at the 12 o'clock position.

### Rear Sight Removal

Remove windage adjustment screw "E" ring (33) and thrust washer (33A). With thumb pressure against the rear sight base (36), turn windage adjustment screw (32) clockwise until free of the assembly. Do not lose the windage adjustment screw detent ball (34) or its spring (35). Assemble in reverse order.

### Trigger Assembly Removal

Remove the two trigger assembly retaining screws (62). Lift the trigger assembly housing plate (63) from the grip frame (74). Reassemble in reverse manner.

Further takedown is not necessary or recommended for ordinary cleaning. Should it be required, proceed as follows:

Free the slot of the cocking lever pivot screw (30) and remove. Depress the cocking lever latch (9) and unhook the front of the cocking lever (29). Swing the cocking lever assembly with retracting lever (27) and pin (28) from the rear of the mainspring retainer (31) sufficiently to allow the front of the retracting lever (27) to be removed from its seat in the compression chamber (19). With barrel and piston housing (1) gripped in a padded vise, loosen the main spring retainer screw (12). Carefully take up the spring strain with a block of wood held against the main spring retainer (31) while lifting the retainer screw (12) from the assembly. Ease the mainspring retainer (31) containing the rear sight assembly and the outer piston spring(s) (25 & 26) from the barrel and piston housing.

To remove the rear recoil guide (13), the piston (22) with ring (23) and buffer (24), take the rear "E" ring (16) and spacing washer(s) (14) from the rear recoil guide pin (15) and drift it toward the muzzle enough to free the front "E" ring. Remove this "E" ring, slide the rear recoil guide pin (15) out to the rear. Use caution not to distort the front spacing washers (14), and note sequence for reassembly.

Further disassembly of the shooting mechanism is accomplished by clamping the inverted barrel and piston housing (1) in a padded vise. Remove all the "E" rings from one side of the assembly. Remove the front locking slide retaining pin (47) with

attached "E" ring. Unhook the locking slide spring (46) from the locking slide (45). With a .450" long slave pin of less than .118" dia., push the retaining pin (47) for the compression chamber pawl (49) and trigger pull change lever (50) from the assembly. When the slave pin is in place, these parts with associated springs (46 & 53), plunger (54), detent and screw (52 & 51), will spring free and may be removed as a unit. Push out the trigger pull connector (55), retaining pin (47) with its "E" ring and remove the trigger pull connector (55). Push out sear connector (56) and retaining pin (47) with its "E" ring. A small pick may be used to lift the locking slide (45) enough to slide it forward and free of the assembly. The sear connector (56) may now be picked free of the assembly in a similar manner. Disconnect piston sear catch spring (60) where it attaches to the recoil release pawl (61). With a .450" long slave pin, push out the interlock (57) and recoil release pawl retaining pin (47). Make sure that the interlock tension spring (58) is caught by the slave pin. Using another slave pin of similar size, push the retaining pin (47) for the piston sear catch (59) from the assembly. Now the interlock (57), piston sear catch (59), recoil release pawl (61) and the two springs may be removed from the assembly as a unit. The compression chamber (19) can now be slid rearward and removed.

Reassemble in reverse order.



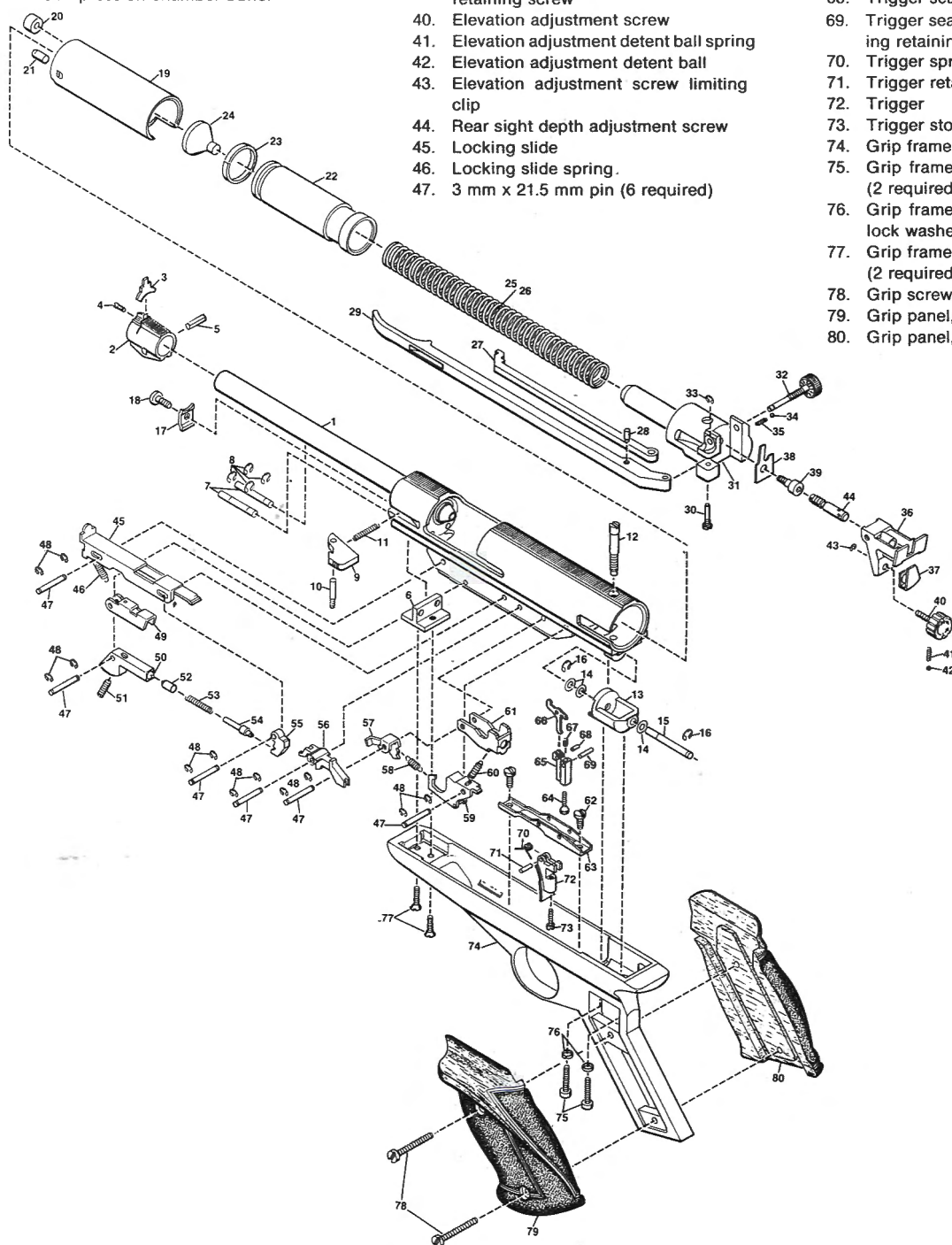


# Parts Legend

1. Barrel and piston housing
2. Front sight base
3. Front sight insert
4. Front sight base retaining screw
5. Front sight base retaining pin
6. Recoil guide (front)
7. Recoil guide pin (front) (2 required)
8. Recoil guide pin "E" ring (4 required)
9. Cocking lever latch
10. Cocking lever latch retaining screw
11. Cocking lever latch spring
12. Main spring retainer screw
13. Recoil guide (rear)
14. Recoil guide spacers (as required)
15. Recoil guide pin (rear)
16. Recoil guide pin "E" rings (2 required)
17. Recoil lock
18. Recoil lock screw
19. Compression chamber
20. Barrel seal
21. Compression chamber buffer

22. Piston
23. Piston ring
24. Piston buffer
25. Piston spring (outer)
26. Piston spring (inner) Not present in all models
27. Piston retracting lever
28. Piston retracting lever pin
29. Cocking lever
30. Cocking lever pivot screw
31. Mainspring retainer
32. Windage adjustment screw
33. Windage adjustment "E" ring
- 33A. Thrust washer
34. Windage adjustment screw detent ball ball
35. Windage adjustment screw detent ball tension spring
36. Rear sight base
37. Rear sight depth adjustment plate
38. Rear sight elevation adjustment spring
39. Rear sight elevation adjustment spring retaining screw
40. Elevation adjustment screw
41. Elevation adjustment detent ball spring
42. Elevation adjustment detent ball
43. Elevation adjustment screw limiting clip
44. Rear sight depth adjustment screw
45. Locking slide
46. Locking slide spring
47. 3 mm x 21.5 mm pin (6 required)

48. "E" rings for above (12 required)
49. Compression chamber pawl
50. Trigger pull change lever
51. Change lever fine adj. screw
52. Change lever spring seat
53. Change lever spring
54. Change lever spring plunger
55. Change lever connector
56. Sear connector
57. Interlock
58. Interlock tension spring
59. Piston sear catch
60. Piston sear catch spring
61. Recoil release pawl
62. Trigger assembly retaining screws (2 required)
63. Trigger assembly housing plate
64. Pull-off adjustment screw
65. Pull-off adjustment/trigger sear housing
66. Trigger sear
67. Trigger sear spring
68. Trigger sear retaining pin
69. Trigger sear/pull-off adjustment housing retaining pin
70. Trigger spring
71. Trigger retaining pin
72. Trigger
73. Trigger stop adjustment screw
74. Grip frame
75. Grip frame attachment screws (rear) (2 required)
76. Grip frame attachment screws (rear) lock washer (2 required)
77. Grip frame attachment screws (front) (2 required)
78. Grip screws (2 required)
79. Grip panel, left
80. Grip panel, right





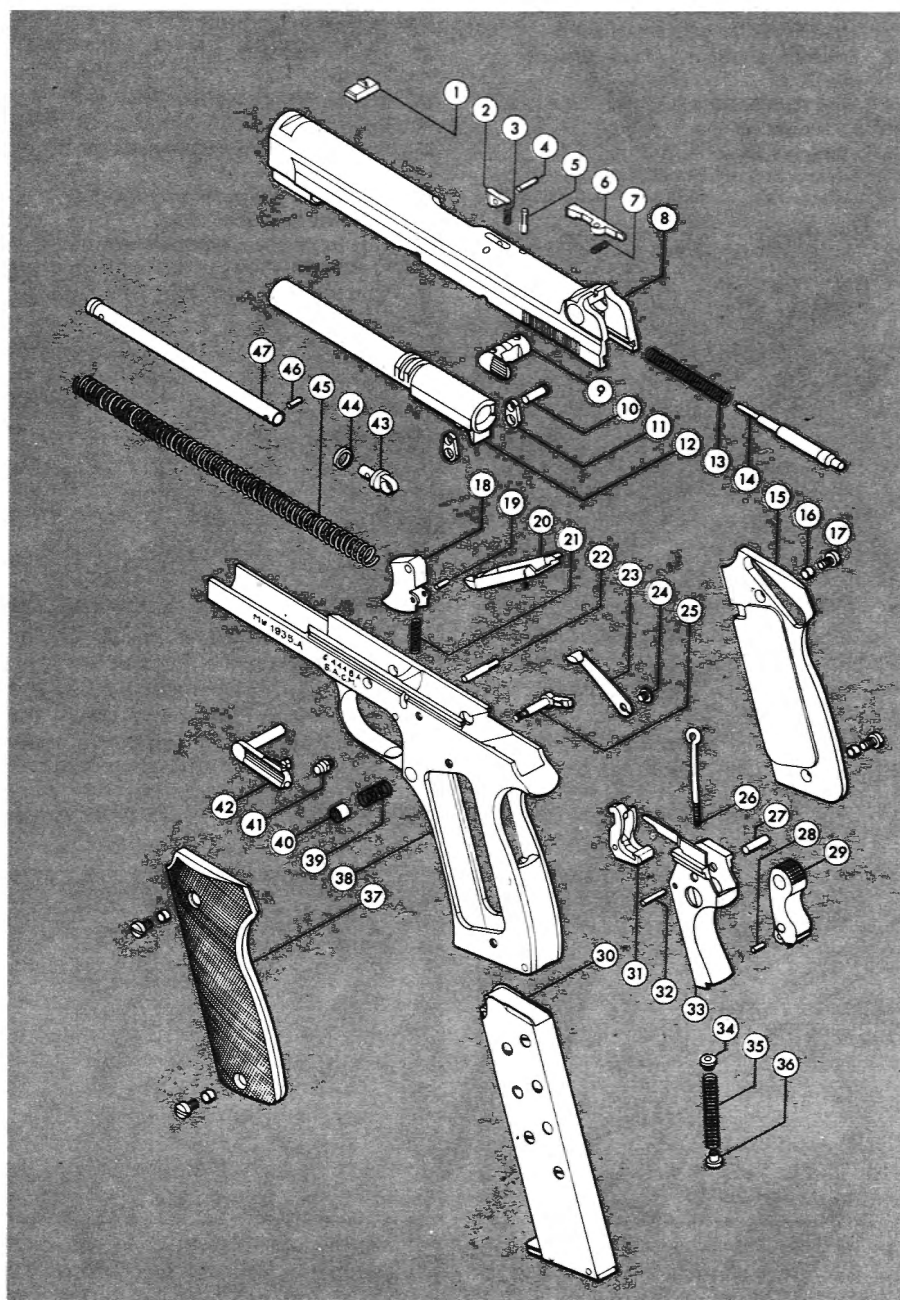


# French Model 1935-A Pistol

By DENNIS RIORDAN

**B**ETWEEN the World Wars, the French experimented with several different automatic pistols in an effort to find a suitable replacement for their 8 mm. Model 1892 Service revolver. This culminated in adoption of the 7.65 mm. Model 1935-A automatic pistol.

Based on the Browning short-recoil system and the designs of French engineer Charles Petter, this pistol was developed and produced by the Societe Alsacienne de Constructions Mecaniques, better known as S.A.C.M. It has an 8-round magazine, weighs 26 ozs., and fires a 7.65 mm. Long cartridge that is underpowered for military handgun use by U.S. standards. The muzzle



## Parts Legend

1. Front sight
2. Cartridge indicator
3. Cartridge indicator spring
4. Cartridge indicator pin
5. Extractor pin
6. Extractor
7. Extractor spring
8. Slide
9. Safety
10. Barrel link pin
11. Barrel link (2)
12. Barrel
13. Firing pin spring
14. Firing pin
15. Right grip
16. Grip screw bushing (4)
17. Grip screw (4)
18. Trigger
19. Trigger bar pin
20. Trigger bar/disconnector
21. Trigger bar spring
22. Trigger pin
23. Magazine safety
24. Magazine safety screw
25. Magazine catch
26. Hammer strut
27. Hammer pin
28. Hammer strut pin
29. Hammer
30. Magazine
31. Sear
32. Sear pin
33. Sear housing/ejector
34. Sear pressure plate
35. Hammer spring
36. Hammer strut nut
37. Left grip
38. Frame
39. Magazine catch spring
40. Magazine catch nut
41. Slide stop catch
42. Slide stop
43. Recoil spring guide tip
44. Recoil spring ring
45. Recoil spring
46. Recoil spring guide pin
47. Recoil spring guide



velocity of the 88-gr. round-nose jacketed bullet is 1160 feet per second. Muzzle energy is 263 ft.-lbs.

During firing, the barrel and slide are locked together in the first 3/16" of rearward travel. The rear of the barrel then pivots down to unlock, and the slide continues to the rear alone. This system is similar to that of the U.S. M1911 Colt .45 pistol.

Other features similar to that of the M1911 Colt are the slide stop and magazine catch on the left of the frame.

Located on the upper left of the slide, the safety shows considerable originality in design. Instead of locking the hammer in cocked position, it can be turned to safe with the hammer cocked or lowered. When on safe, it blocks the hammer from contacting the firing pin, and the hammer can be safely lowered by pulling the trigger. Also, the safety thumbpiece projects above the slide when the safety is engaged. This serves as a signal that the pistol is on safe.

Another safety device is a loading indicator that projects up from the slide when the chamber is loaded. There is also a half-cock position of the hammer and a magazine safety that prevents firing when the magazine is removed. A grip safety is not provided.

The well-shaped grips are checkered black plastic.

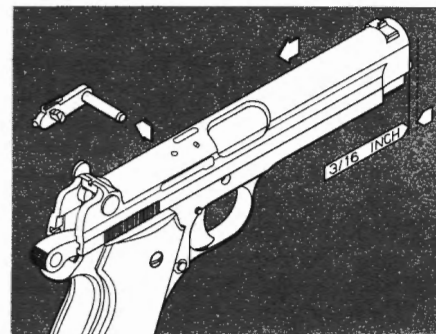
The pistol can be field-stripped quickly and easily without use of tools. Instead of the recoil spring being separate, it is of captive type and forms an assembly with the spring guide. This greatly facilitates field-stripping and reassembly. The hammer, sear, and several other lock parts are also combined in an assembly that can be easily removed from the frame.

Sights are simple and rugged. The square-notch rear sight is integral with the slide, and the square-top front sight can be driven laterally. There is no means of adjusting elevation.

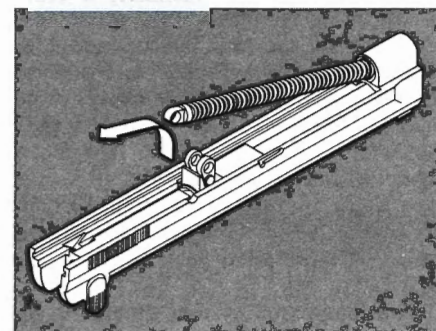
This well-designed pistol was used by France during World War II, and some were used by Germany after the French defeat early in the War. In the 1950's it was replaced by a new French pistol in 9 mm. Luger caliber, and many Model 1935-A pistols were sold in the U.S. as military surplus.

The black painted finish of the metal parts gives the Model 1935-A a cheap appearance. However, the pistol is well-made and reliable. Its chief drawback is that it fires the 7.65 mm. Long cartridge which leaves much to be desired for military use and is not generally available except from surplus arms firms and dealers in collector cartridges.

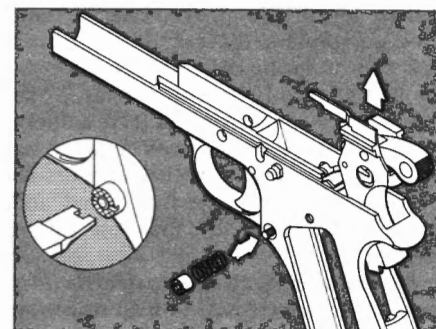
1. To field strip the French Model 1935-A pistol, remove the magazine (30) and clear the chamber. Pull the slide (8) 3/16" to the rear, and remove the slide stop (42) to the left. Push the slide forward off the frame (38).



2. With the slide held bottom up, grasp the recoil spring and guide assembly, and remove it up and to the rear. Remove the barrel (12) in a similar manner. This completes field stripping.



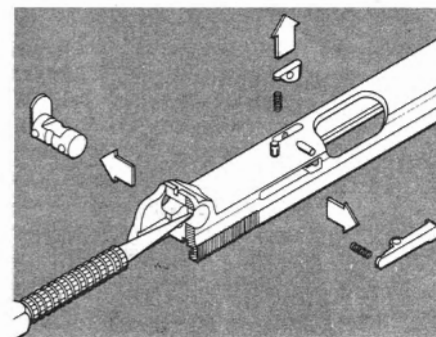
3. For further disassembly, grasp the upper part of the lock assembly, and lift it upward out of the frame. Remove the grip screws (17), grip screw bushings (16), and grips (15), (37). Grind a square notch in a screwdriver blade, and use this tool to unscrew the magazine catch nut (40). The magazine catch spring (39) comes out to the left, the magazine catch (25) to the right.



4. Remove the magazine safety screw (24) and magazine safety (23). Drift out the trigger pin (22) to the right. Then lift the trigger and trigger bar assembly from the top of the frame.



5. Push firing pin (14) forward with a thin punch, and pull the safety (9) from the left of the slide. Ease firing pin and firing pin spring (13) rearward out of the slide. Drift out the cartridge indicator pin (4) to the right, and remove the cartridge indicator (2) and indicator spring (3). Drift extractor pin (5) out through top of slide, and remove extractor (6) and extractor spring (7). Reassemble in reverse taking care that the extractor pin does not project from the lower surface of the slide.





# FROMMER STOP AUTOMATIC PISTOL

By DENNIS RIORDAN

**P**ISTOLS chambered for the .32 Automatic cartridge are commonly of blowback design. An exception is the Frommer Stop automatic pistol which operates on the long-recoil system. Developed by Rudolf Frommer, a Hungarian arms designer, this pistol was produced by the Small Arms and Machine Works, Inc., Budapest, Hungary. It was introduced commercially about 1911 or 1912, and was offered in .380 Automatic as well as .32 Automatic calibers. During World War I, it was extensively used in .32 Automatic caliber by the Austro-Hungarian Army and police. Many found their way to the U.S. later.

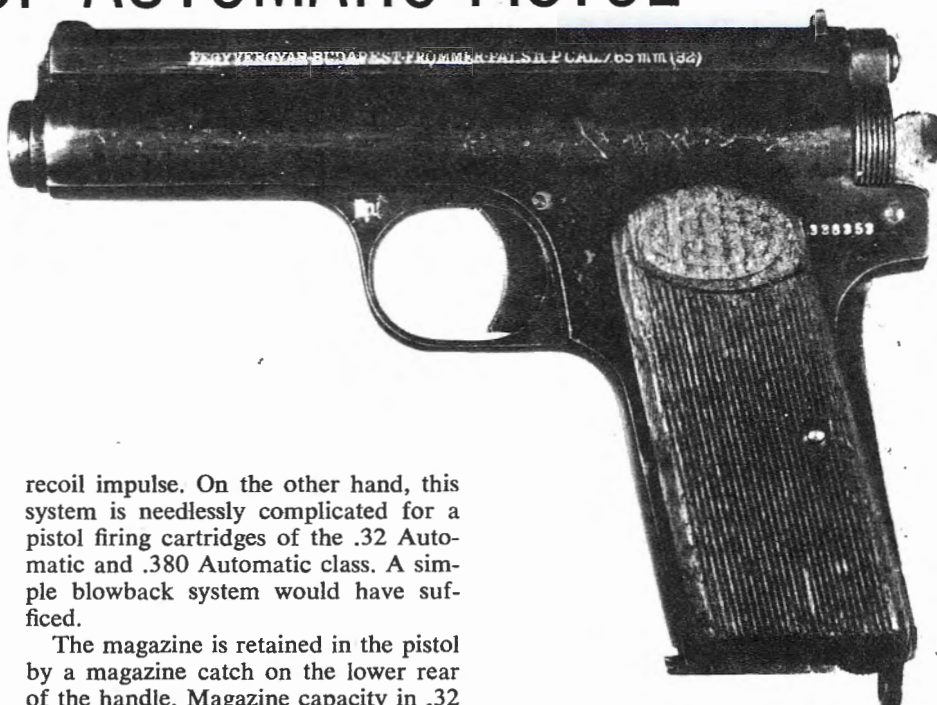
The long-recoil system of the Frommer is rather complex. During firing, the bolt mechanism and barrel are locked together and recoil as a unit. This compresses the recoil spring and bolt return spring above the barrel. At the end of recoil, the bolt is held to the rear by a catch. The barrel then unlocks from the bolt and is driven forward by the recoil spring. As the barrel nears its front position, the bolt is released and is pushed forward by the bolt return spring.

An advantage of this system is that the barrel mass is used to help resist the

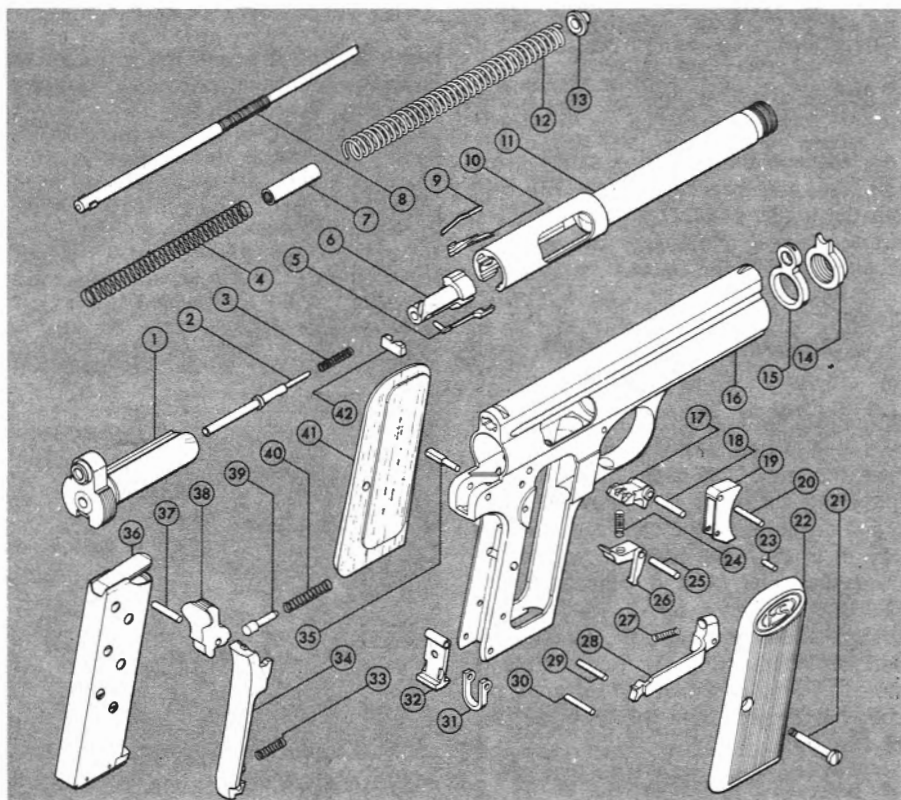
recoil impulse. On the other hand, this system is needlessly complicated for a pistol firing cartridges of the .32 Automatic and .380 Automatic class. A simple blowback system would have sufficed.

The magazine is retained in the pistol by a magazine catch on the lower rear of the handle. Magazine capacity in .32 caliber is seven rounds. The small external hammer has a rounded spur, and the only safety is the grip safety projecting from the rear of the handle.

Workmanship and finish of this 21-oz. pistol are generally excellent, although the serrated wood grips are rather crudely finished. Grip and balance are very good.



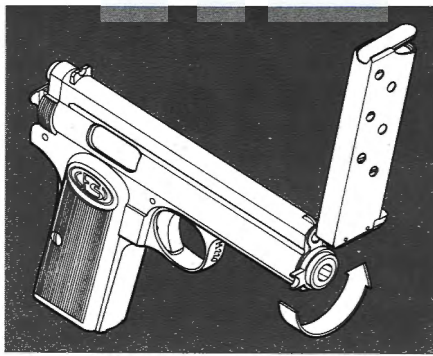
Although complicated, this pistol functions quite well. There is also a small version of the long-recoil Frommer pistol called the Frommer Baby. It is mechanically similar to the Stop model. Both the Stop and Baby models gave way in the 1920's to a Frommer-designed pistol based on the Browning blowback system.



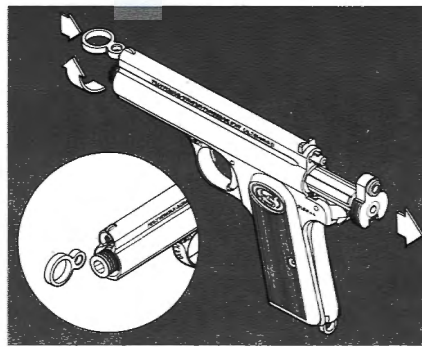
## PARTS LEGEND

- |                               |                           |
|-------------------------------|---------------------------|
| 1. Bolt body                  | 23. Trigger bar pin       |
| 2. Firing pin                 | 24. Sear spring           |
| 3. Firing pin spring          | 25. Sear pin              |
| 4. Bolt return spring         | 26. Sear                  |
| 5. Extractor                  | 27. Trigger spring        |
| 6. Bolt head                  | 28. Trigger bar           |
| 7. Recoil spring guide sleeve | 29. Magazine catch pin    |
| 8. Recoil spring guide        | 30. Grip safety pin       |
| 9. Ejector spring             | 31. Lanyard loop          |
| 10. Ejector                   | 32. Magazine catch spring |
| 11. Barrel and extension      | 34. Grip safety           |
| 12. Recoil spring             | 35. Disconnecter pin      |
| 13. Barrel nut retainer       | 36. Magazine              |
| 14. Barrel nut                | 37. Hammer pin            |
| 15. Barrel guide              | 38. Hammer                |
| 16. Frame                     | 39. Hammer plunger        |
| 17. Bolt catch                | 40. Hammer spring         |
| 18. Bolt catch pin            | 41. Left grip             |
| 19. Trigger                   | 42. Rear sight            |
| 20. Trigger pin               |                           |
| 21. Grip screw                |                           |
| 22. Right grip                |                           |

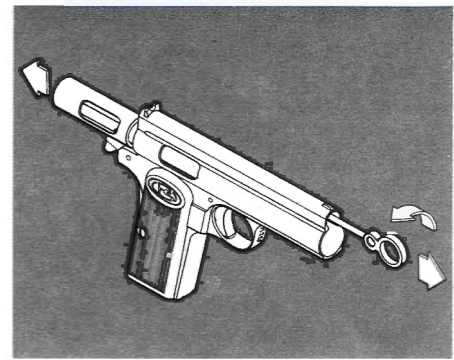




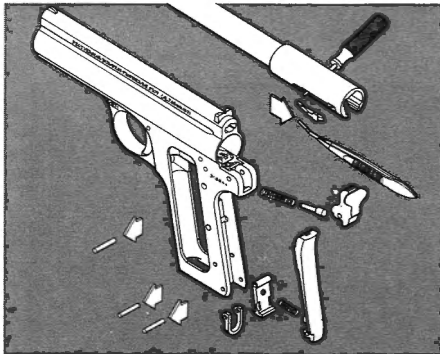
**1** To field-strip the Frommer, remove magazine (36) and clear the chamber. Depress barrel nut retainer (13) with a corner of the magazine and unscrew barrel nut (14). Ease off pressure on barrel nut retainer and barrel guide (15) and remove them. Remove recoil spring (12).



**2** Top of barrel guide is slotted for use as a tool. Fit slot over cross lug at end of recoil spring guide (8). Push guide rearward, and rotate  $\frac{1}{4}$  turn. Cock hammer (38) and pull bolt body (1) out to rear. Rotate bolt head (6) clockwise to separate from body.



**3** Again making use of barrel guide, rotate recoil spring guide an additional  $\frac{1}{4}$  turn to release it from frame (16). Ease guide out forward. Push barrel (11) rearward to remove from frame. This completes field-stripping.

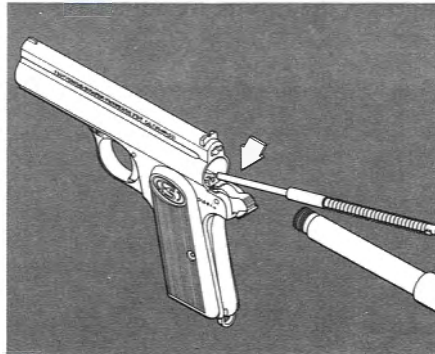


**4** For further disassembly, use a small screwdriver to flex ejector spring (9) outward slightly. Grasp spring with a tweezers and slide out rearward; then, remove ejector (10). Unscrew grip screw (21) and remove grips (22, 41). Lower hammer. Drive out hammer pin (37) to release hammer with its plunger (39) and spring (40). Remove grip safety (34), spring (33), and lanyard loop (31), by driving out the grip safety pin (30). Drive out magazine catch pin (29) to free the catch (32).

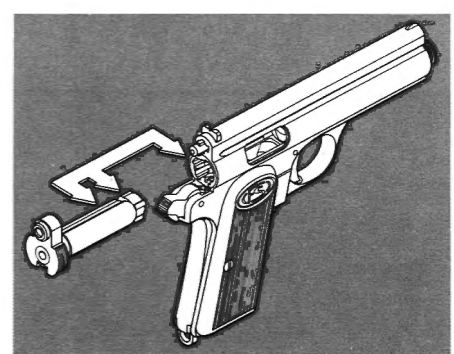
Bolt catch (17) and trigger with trigger bar (19, 28) can now be removed by driving out pins (18, 20). Both disconnecter pin (35) and sear pin (25) must be driven out to detach sear (26). Remove these parts only where necessary, as sear and trigger springs (24, 27) are difficult to reinsert.

Bolt head (6) is staked on both sides of extractor (5). The mushroomed edges must be filed down to disassemble these parts and the bolt head restaked on assembly. This should not be attempted without good cause.

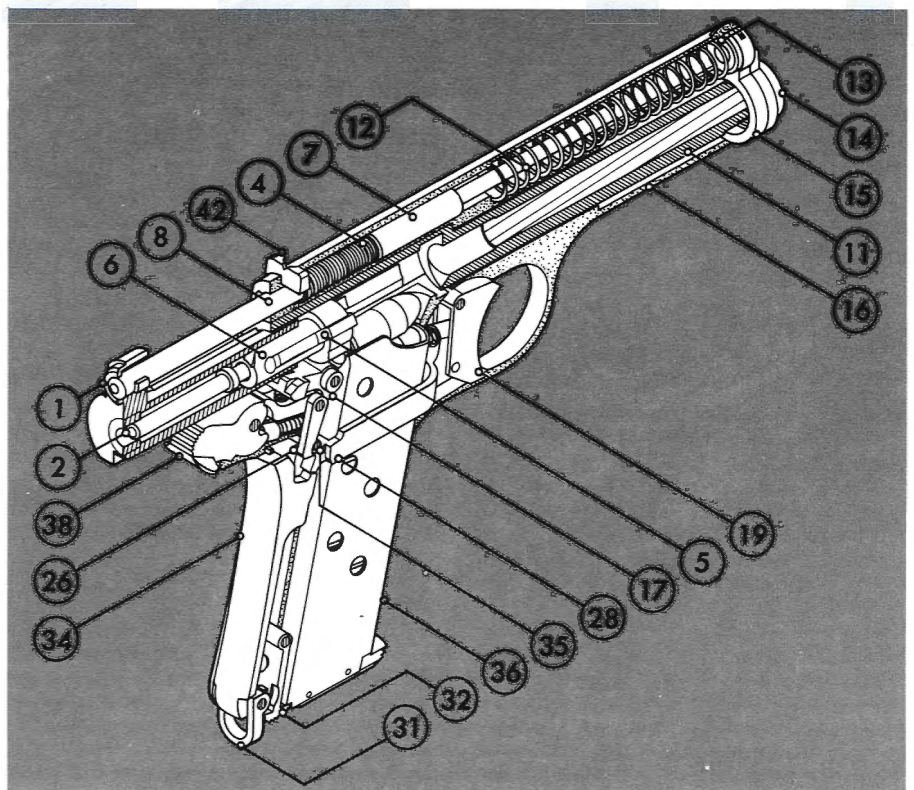
**7** Cutaway shows relationship between assembled parts. Bolt has been pulled fully to rear, unlocking bolt head, cocking hammer, and compressing bolt return spring. Parts are number keyed to parts legend.



**5** Reassemble in reverse. Depress bolt catch with tip of recoil spring guide when inserting barrel so that catch clears barrel threads.



**6** Bolt head must be turned so that its smaller locking lug aligns with rib on bolt body and groove in barrel extension when these parts are reassembled.





**EXPLODED  
VIEW:**

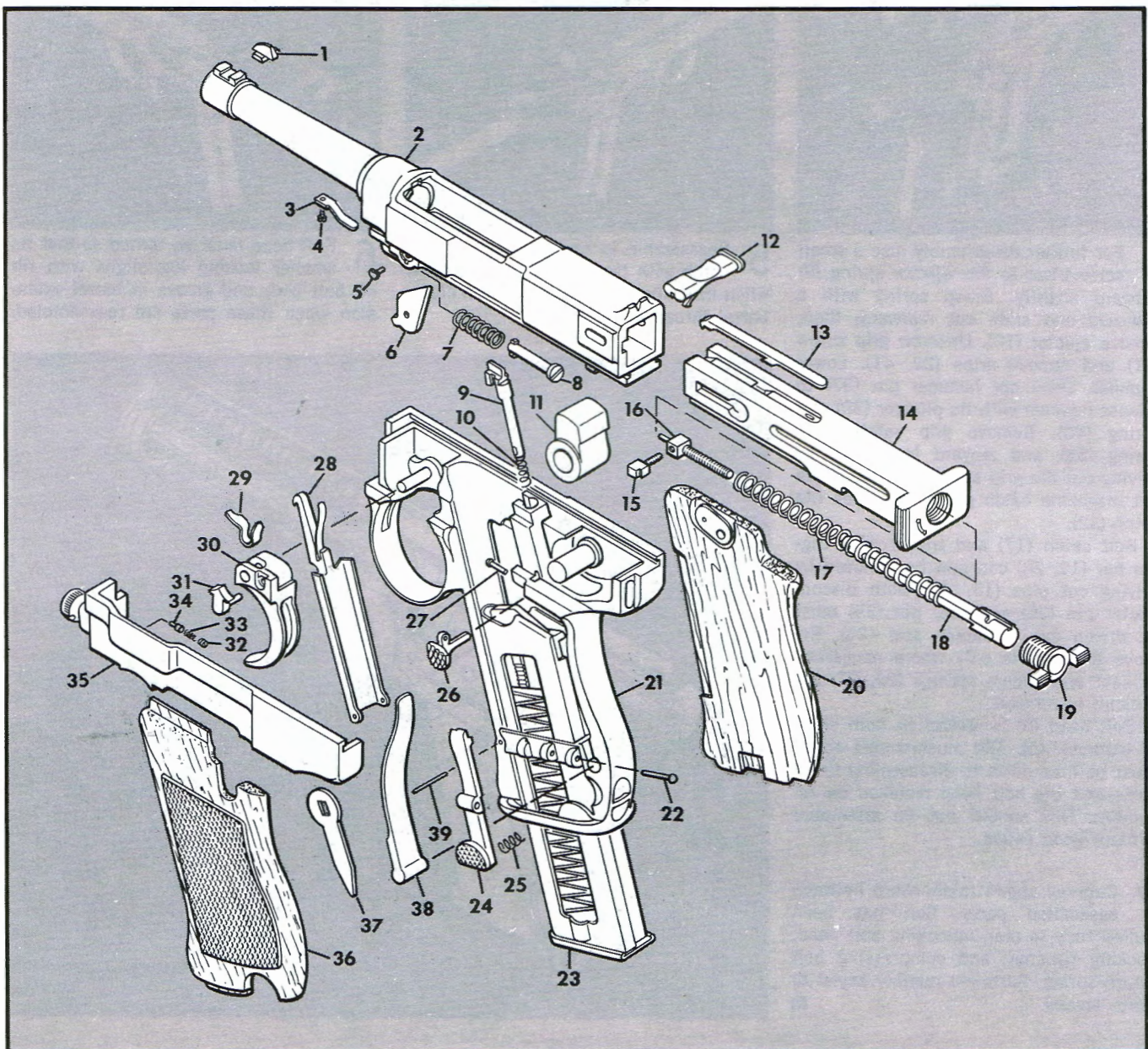
# The Glisenti M1910

THE Glisenti pistol was originally patented in 1905 by the Societa Siderurgica Glisenti in Brescia, Italy. Early pistols were chambered for the .30 Luger (7.63 mm) cartridge, but in 1909 the gun appeared in 9 mm caliber, was adopted by the Italian Military and eventually named the Pistola Automatica M910.

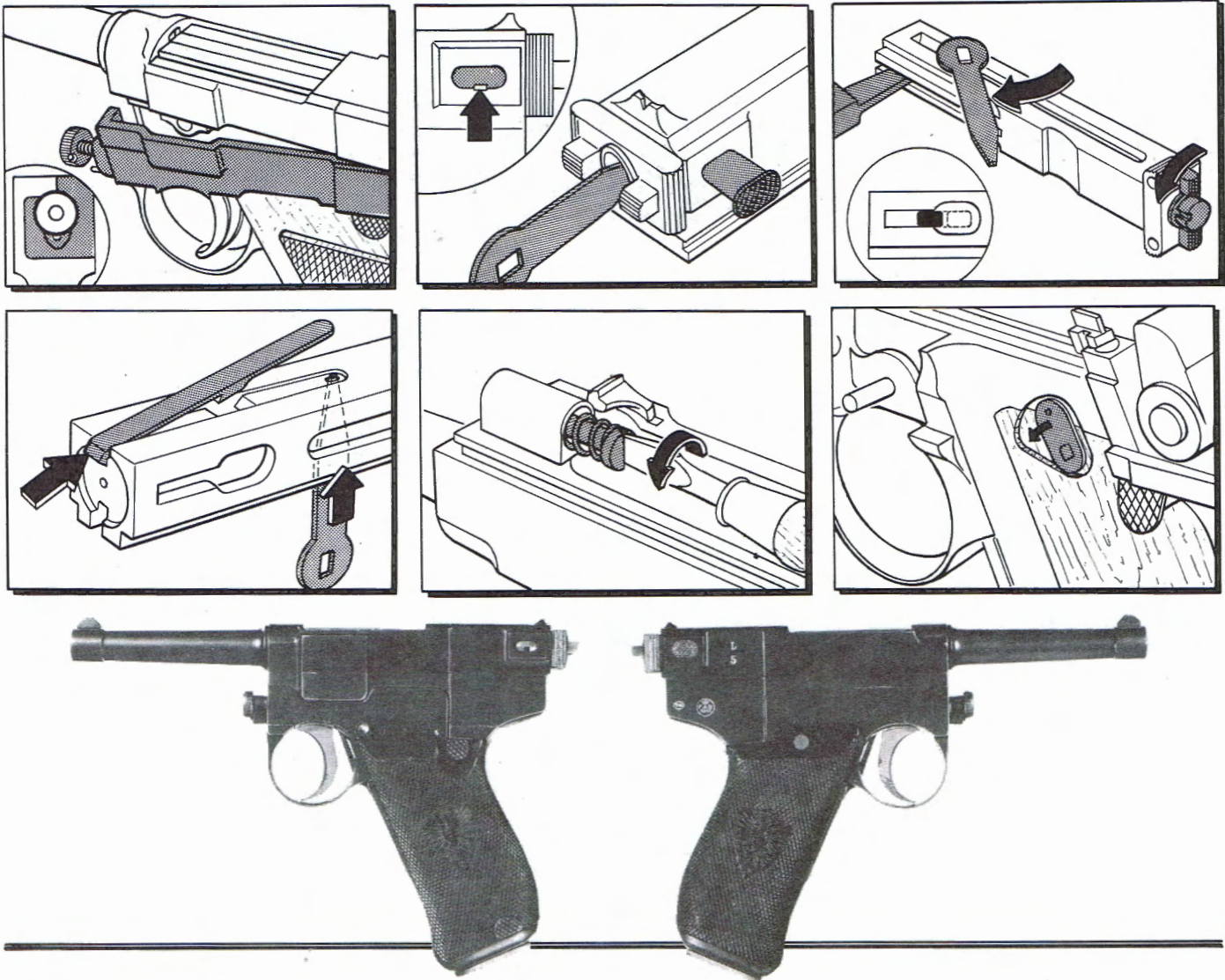
The Glisenti will chamber conventional 9 mm Luger ammo, but was not designed to handle it. The 9 mm ammo as made in Italy developed considerably less pressure than 9 mm German-made ammo of the same period, and the usage of commonly available 9 mm Luger ammo in the Glisenti is not recommended.

In 1911 a simplified version was put out by Metallurgica Bresciana Tempi (which accounts for the MBT molded into the grips of some guns). While the Brixia, as the revised gun was called, and the Glisenti are similar in appearance, their parts are not interchangeable. ■

BY EDWARD J. HOFFSCHMIDT







## Disassembly Procedure

Step 1. Exposing the operating mechanism only requires removing the side plate (35). To do this, first remove the magazine (23) and clear the chamber. Push in the plunger (34), turn the large knurled screw (40) until it stops, then lift off the side plate, the left grip (36) and the disassembly tool (37). Push the barrel and receiver assembly to the left until it is free of the guide rib in the frame, then lift it up.

Step 2. The bolt assembly (14) is held in the receiver (2) by a cross key (12). To remove it, push up on the small spring (shown in the inserted drawing), push the key out from left to right and withdraw the bolt (14). To replace the bolt, push the firing pin in as far as it can go. It may be necessary to trip the sear to get it far enough forward to allow the cross key to clear the firing pin spring (17). Use a screwdriver or the disassembly tool to push the firing pin (18) forward.

Step 3. The firing pin guide (15) also acts as the sear and must be removed before removing the firing pin (18). It has a left hand thread and must be turned in the direction indicated by the arrow, using the disassembly tool as a wrench. Before attempting to remove the guide, insert a thin blade into the bolt and push back the firing pin until the guide is centered in the wide opening (note inserted drawing). When the guide is out, unscrew the safety catch (19) as shown and remove the firing pin (18), firing pin head (16) and firing pin spring (17).

Step 4. The disassembly tool is used to remove the extractor (13). After the firing pin has been removed, insert the tool into the small elongated slot in the bolt as shown. Push the tail of the extractor up slightly until it is just clear of the bolt (14); then tap it lightly on the front or claw end and it will spring free of the bolt.

Step 5. A separate barrel return spring (7) is incorporated into the underside of the receiver. The spring is rigidly assembled to the

spring guide (8) so the assembly must be removed as a unit by inserting a small screwdriver into the screw slot on the spring guide. Push the plunger forward, rotate it 90° and ease the assembly out.

Step 6. To remove the right grip (20), first remove the magazine and rotate the small plate on the grip as shown. When the plate is free of the cut in the frame, the right hand grip can be lifted off.

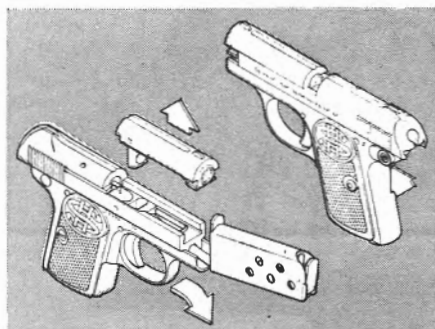
## Parts Legend

- |                              |                           |
|------------------------------|---------------------------|
| 1. Front sight               | 21. Frame                 |
| 2. Barrel & receiver         | 22. Magazine catch pin    |
| 3. Sear spring               | 23. Magazine              |
| 4. Screw                     | 24. Magazine catch        |
| 5. Sear pin                  | 25. Magazine catch spring |
| 6. Sear                      | 26. Hold open catch       |
| 7. Barrel return spring      | 27. Hold open catch pin   |
| 8. Barrel spring guide       | 28. Grip safety           |
| 9. Ejector & hold open catch | 29. Trigger spring        |
| 10. Hold open spring         | 30. Trigger               |
| 11. Locking block            | 31. Disconnecter          |
| 12. Cross key                | 32. Setscrew              |
| 13. Extractor                | 33. Spring                |
| 14. Bolt                     | 34. Plunger               |
| 15. Firing pin guide         | 35. Side plate assembly   |
| 16. Firing pin head          | 36. Left grip             |
| 17. Firing pin spring        | 37. Disassembly tool      |
| 18. Firing pin body          | 38. Recoil spring         |
| 19. Safety catch             | 39. Grip safety pin       |
| 20. Right grip               | 40. Takedown screw        |

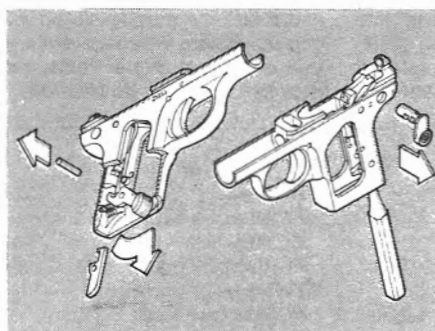


# HAENEL-SCHMEISSER MODEL I

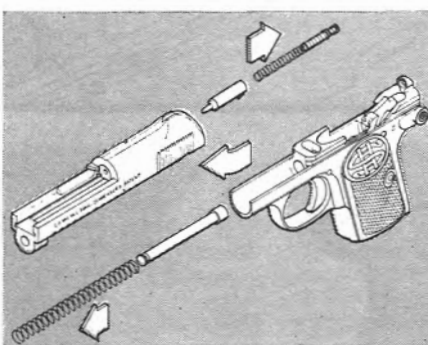
Illustrations by DENNIS RIORDAN  
Text by LUDWIG OLSON



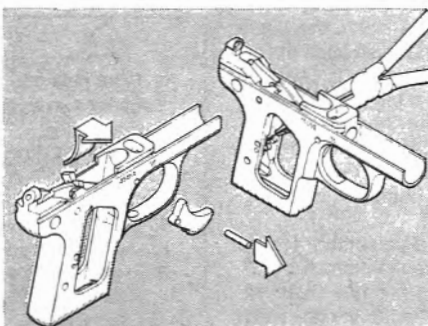
**1** To field-strip the pistol, engage safety (28) on safe, and remove and unload magazine (20). Replace magazine and disengage safety. Draw slide (5) fully rearward to clear chamber. Pull trigger (26), and re-engage safety on safe. Lock slide half open by pulling it back and lifting safety into slide notch. Remove magazine, and engage cutout on its bottom rear with annular groove on exposed tip of recoil spring guide (10). Pull guide forward and down until it locks. Lift out barrel (1).



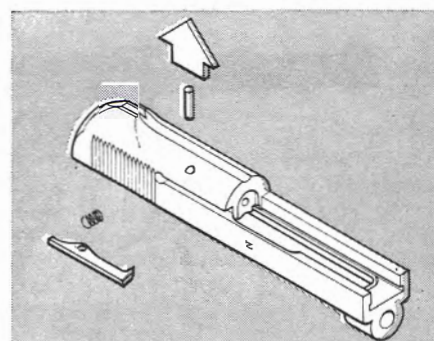
**4** Unscrew grip screw (9), and remove grips (8) (24). Drift out magazine catch pin (30), and remove magazine safety (15). Rotate magazine catch (31) forward into magazine well to unhook from sear spring housing (19). Remove magazine safety, magazine safety spring (16), and magazine catch spring (32) from their frame recesses with tweezers. Raise sear spring housing with flat punch to allow removal of safety. (During reassembly, safety must be installed in engaged position.)



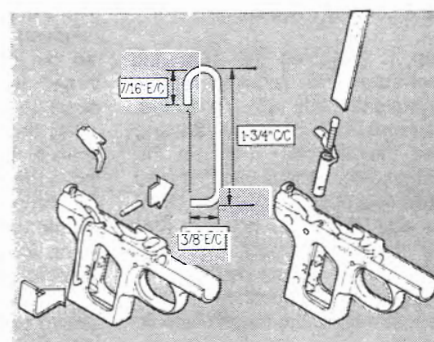
**2** Grasp recoil spring guide from below, maintaining contact between magazine and guide with thumb pressure from above. Raise guide into alignment and ease to rear. Draw slide slightly rearward to unlock from safety, and ease slide forward off frame (12). Remove recoil spring (11) and guide from frame. Then, remove firing pin (6), mainspring (7), signal pin (21), and spring (22) from slide. This completes field-stripping for normal cleaning.



**5** Drift out trigger pin (25), rotate bottom of trigger forward into guard, and remove. Twist trigger bar (27) slightly, so that its upper surface clears top of frame. Pull bar out of its frame recess into magazine well, and remove. Rotate trigger bar spring (29) forward into magazine well, and remove from its fixed frame pin with longnose pliers.



**3** To disassemble further, drift extractor pin (2) upward out of slide, releasing extractor (3) and spring (4).



**6** Bend a piece of 3/32" brazing rod as shown. Place upper end of rod atop head of sear spring plunger (18), depressing the plunger so that lower end of rod may be inserted into frame hole for magazine catch pin. Drift out sear pin (14), and remove sear (13). If necessary to remove spring housing, make a concave cut at end of 3/16" wide flat wood stick, and use stick to depress sear spring plunger. Remove brazing rod tool, and then ease out plunger and sear spring (17). Wear glasses and keep face clear. Reassemble in reverse.



A semi-automatic pistol small enough to be carried in a vest pocket was designed by John Browning and introduced by the Belgian firm Fabrique Nationale in 1906. The great success of this compact cal. .25 ACP handgun resulted in the development of many other vest-pocket semi-automatic pistols, among them the Haenel-Schmeisser Model I.

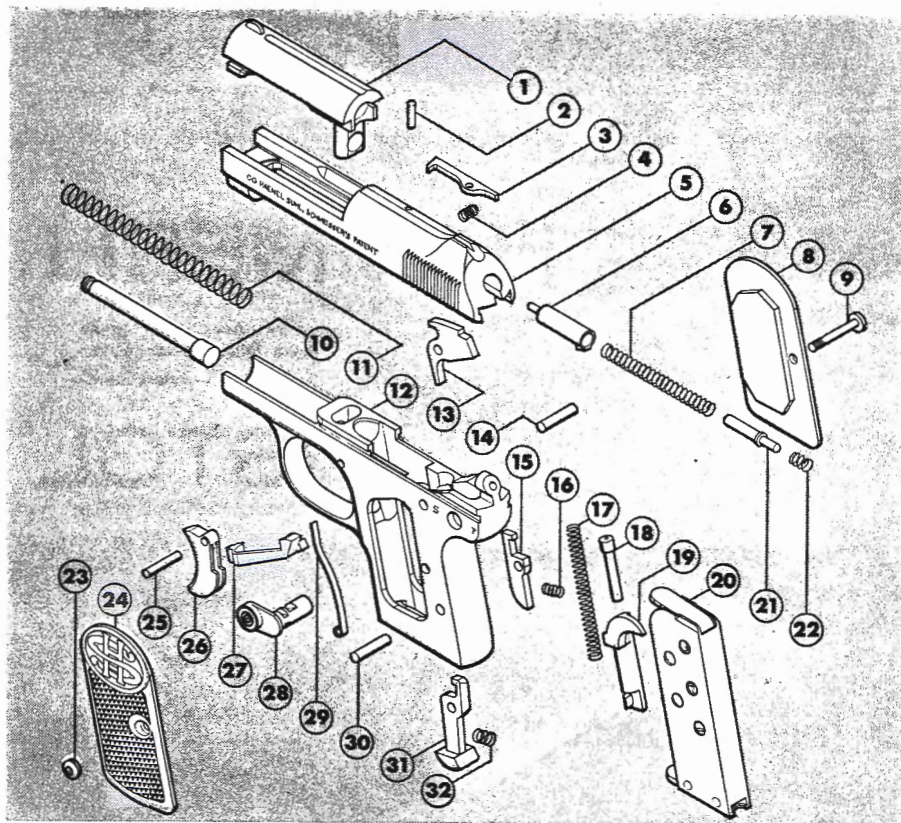
Designed by Hugo Schmeisser, the Haenel-Schmeisser Model I pistol was produced by the C. G. Haenel firm, Suhl, Germany. This blowback-operated handgun chambered for the cal. .25 ACP cartridge was brought on the market in the early 1920's. It is generally similar in appearance to the Browning vest-pocket pistol introduced in 1906, but differs considerably from the Browning in mechanical details.

The Haenel-Schmeisser Model I has a spring-driven firing pin as in the Browning vest-pocket pistol, and the firing pin also serves as the ejector. When the pistol is cocked, a signal pin projects from the rear of the frame. There is no ejection port in the slide as in the Browning. Instead, the upper front of the slide is cut away so that the breech is exposed when the slide is to the rear.

Located on the upper left side of the frame behind the grip, the safety is of half-turn type. The magazine cannot be removed unless the safety is engaged on safe. Also, the safety cannot be turned forward to the fire position with the magazine removed from the pistol. This unusual arrangement accomplishes the same thing as the conventional magazine safety of many other semi-automatic pistols, but is slower since it requires operation of the manual safety.

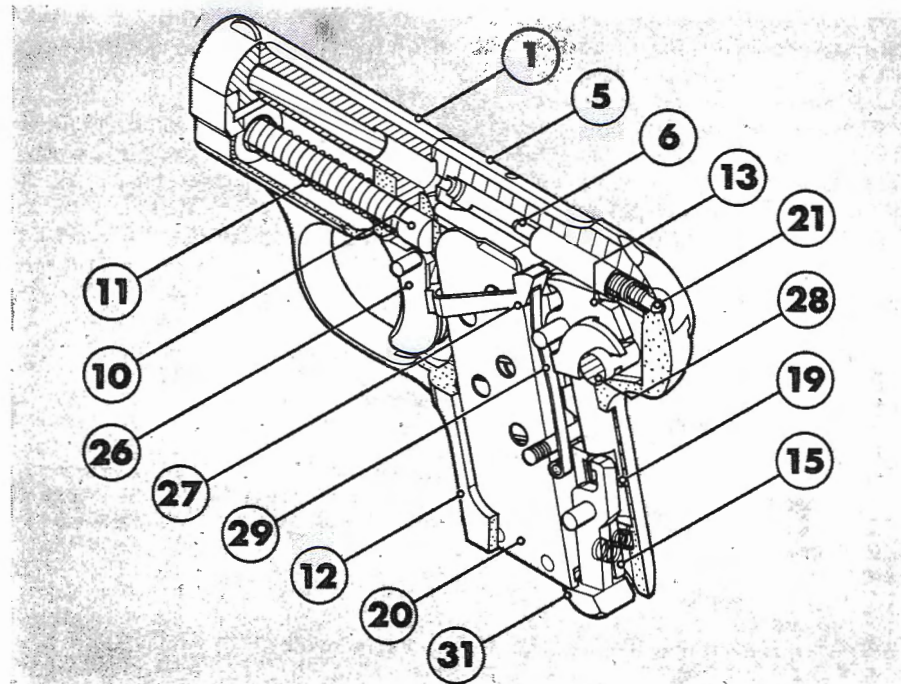
Overall length of the pistol is 4½", and weight unloaded is 13½ ozs. The magazine holds six rounds. Metal parts are blued, and the black hard rubber grips are checkered and bear the interlocked letters "HS". Workmanship and finish are excellent.

This pistol should not be confused with the Haenel-Schmeisser Model II pistol which is smaller and lighter than the Model I. Both models were discontinued at about the time of World War II.



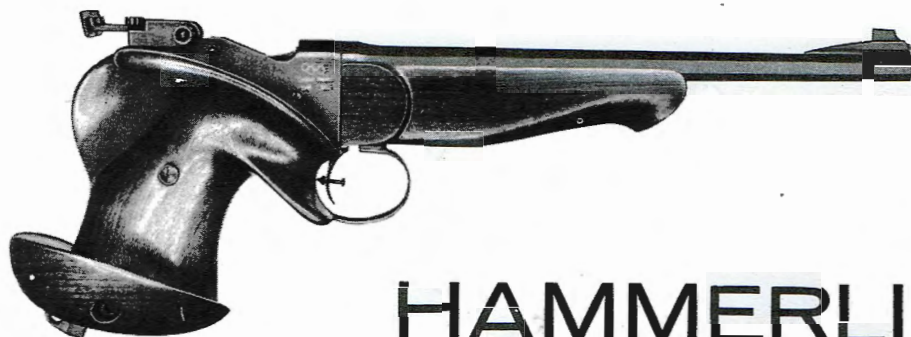
#### PARTS LEGEND

- |                     |                            |                         |                           |
|---------------------|----------------------------|-------------------------|---------------------------|
| 1. Barrel           | 9. Grip screw              | 17. Sear spring         | 25. Trigger pin           |
| 2. Extractor pin    | 10. Recoil spring guide    | 18. Sear spring plunger | 26. Trigger               |
| 3. Extractor        | 11. Recoil spring          | 19. Sear spring housing | 27. Trigger bar           |
| 4. Extractor spring | 12. Frame                  | 20. Magazine            | 28. Safety                |
| 5. Slide            | 13. Sear                   | 21. Signal pin          | 29. Trigger bar spring    |
| 6. Firing pin       | 14. Sear pin               | 22. Signal pin spring   | 30. Magazine catch pin    |
| 7. Mainspring       | 15. Magazine safety        | 23. Grip escutcheon     | 31. Magazine catch        |
| 8. Right grip       | 16. Magazine safety spring | 24. Left grip           | 32. Magazine catch spring |



7 Cutaway indicates relative position of assembled parts. Pistol is shown cocked and unloaded, with safety disengaged. Parts are numbered keyed to parts legend.





Hammerli Model 103.

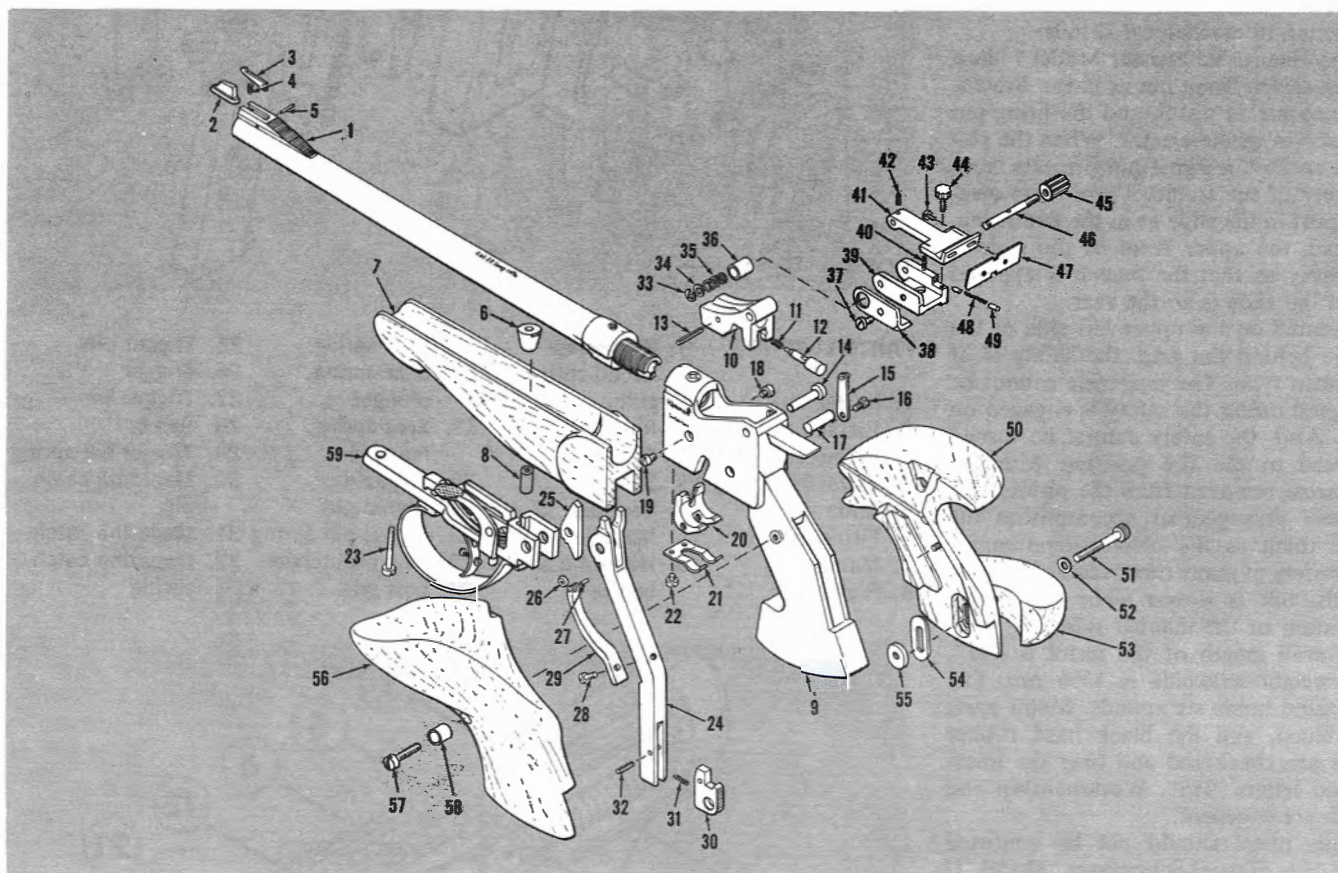
# HAMMERLI FREE- PISTOL

By EDWARD J. HOFFSCHMIDT

THE free-pistol is designed specifically for precision slow-fire target shooting. It is free of practically all design restrictions, hence the term free-pistol. Choice of barrel length, sight radius, trigger pull and grip shape are practically unlimited.

By far the most popular is the Hammerli free-pistol. It has swept the field in most International and Olympic matches. This popularity is based on the amazing reputation for accuracy that the gun has established for itself.

Basically the Hammerli is a cal. .22 long rifle single-shot Martini action pistol. The set trigger mechanism can be adjusted to maximum sensitivity. Since the slow-fire 50-meter International



## Parts Legend

- |                              |                                |                           |                        |
|------------------------------|--------------------------------|---------------------------|------------------------|
| 1. Barrel                    | 15. Hinge pin retaining spring | 29. Mainspring            | 45. Windage screw      |
| 2. Front sight blade         | 16. Spring retaining screw     | 30. Lever latch           | 46. Sight leaf hinge   |
| 3. Front sight latch         | 17. Cross pin                  | 31. Latch spring          | 47. Sight blade        |
| 4. Sight latch spring        | 18. Right extractor screw      | 32. Latch pin             | 48. Detent spring      |
| 5. Latch hinge pin           | 19. Left extractor screw       | 33. C-washer              | 49. Detent (2)         |
| 6. Barrel lug                | 20. Extractor                  | 34. Washer                | 50. Right grip         |
| 7. Forestock                 | 21. Extractor spring           | 35. Spring                | 51. Heel support screw |
| 8. Bushing                   | 22. Extractor spring screw (2) | 36. Nut                   | 52. Washer             |
| 9. Frame                     | 23. Front guard screw          | 37. Sight retainer screw  | 53. Heel support       |
| 10. Breechblock              | 24. Lever                      | 38. Retainer plate        | 54. Elongated washer   |
| 11. Firing pin spring        | 25. Hammer                     | 39. Sight base            | 55. Nut                |
| 12. Firing pin               | 26. Spring roller              | 40. Sight leaf spring     | 56. Left grip          |
| 13. Firing pin retaining pin | 27. Roller pin                 | 41. Sight leaf            | 57. Grip screw         |
| 14. Breechblock hinge pin    | 28. Mainspring retaining screw | 42. Retainer pin          | 58. Bushing            |
|                              |                                | 43. Sight blade screw     | 59. Trigger assembly   |
|                              |                                | 44. Sight elevating screw |                        |



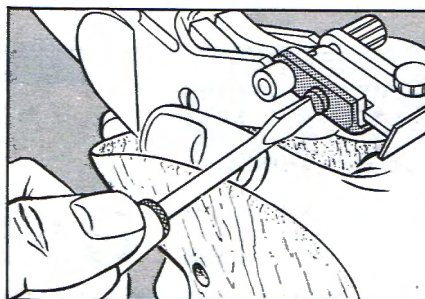
matches are generally fired over a 3-hour period, a shooter must be able to relax his grip frequently. Hammerli free-pistol grips are designed for just that. When a shooter buys a Hammerli, the company requests a sketch of his hand and information on whether he shoots with his arm extended or bent in the European manner. The resulting grip will fit like a glove. However, if a shooter wants to shape his own, the grip can be supplied unfinished.

The Martini-type action of the Hammerli gives the rigidity and short hammer throw necessary in any super-accurate gun. The action also allows for easy loading and has a powerful extraction system.

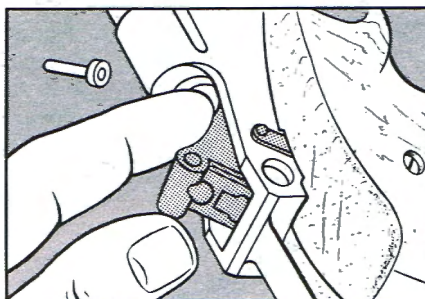
The frames of earlier Hammerli free-pistols were machined from bar stock, a costly procedure. With the advent of precision investment casting, Hammerli chose this method to produce the frame and some of the internal parts. The

resultant gun is just as accurate as was the earlier model.

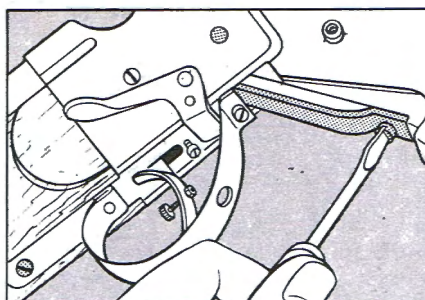
The Hammerli Models 101, 102, and 103 were replaced in February 1963 by the Models 104 and 105. The new pistols have the same mechanism as former models, but are fitted with improved grips, an adjustable rest for the trigger finger, and a larger trigger guard.



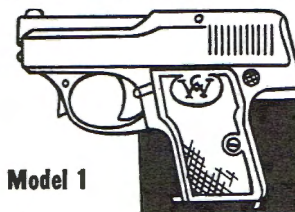
**2** Two methods of rear sight attachment are used by Hammerli. The later type shown here is attached by a sight retainer screw (37) and a retainer plate (38). When the screw is loosened, the rear sight slides off the integral sight mount. The earlier type uses 2 screws to retain the sight. These are under the leaf and tapped into the sight mount. The leaf must be raised upright to get at these screws.



**3** Occasionally it is necessary to remove the breechblock (10) for cleaning. To remove it, lift the hinge pin retaining spring (15) slightly and push it forward and clear of the breechblock hinge pin (14). Push out the hinge pin. Depress front of the breechblock (10) and lift it out. It may be necessary to move the loading lever a bit to free it from the breechblock.



**4** The cross pin (17) retains the rear of the trigger guard, the lever (24), and the hammer (25). Before attempting to remove it, loosen the mainspring retaining screw (28); this relieves tension on the cross pin (17). When cross pin is out, the trigger mechanism can be removed intact by removing front guard screw (23).

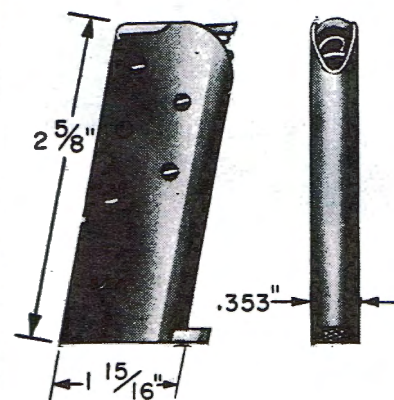


Walther Model 1

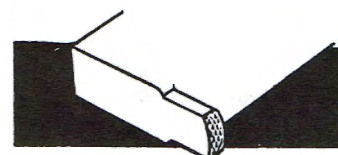
Cal. .25

## PISTOL MAGAZINES

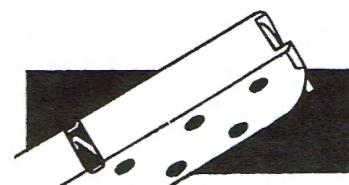
One of a series



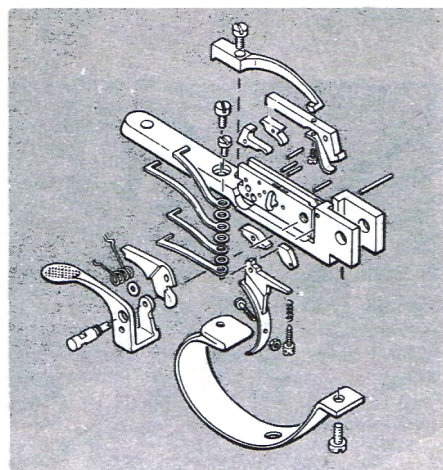
In 1908, Carl Walther founded his famous line of pistols with the .25 cal. Model 1. This little vest-pocket gun, although well made, shows none of the ingenious design features found in later Walther pistols. The safety catch is a cross button, awkward to operate, and the takedown system leaves much to be desired. Apparently it was difficult to sell or manufacture, for in 1909 it was superseded by the more compact Model 2.



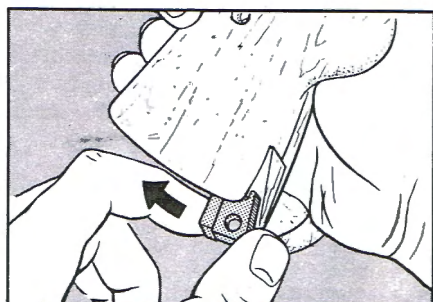
Model 1 magazines are well made but have little to set them apart from other .25 cal. pistol magazines. The best point of recognition is the thick floorplate with checkering on the end, as shown.



Also the magazine catch notch is deeper and much higher up on the back strap than usual.—E. J. HOFFSCHMIDT



The trigger mechanism is the heart of the cal. .22 Hammerli free-pistol. It is carefully adjusted at the factory and can be adjusted to a very light pull. The exploded view of the trigger mechanism gives some idea of its complexity and why it should be disassembled and adjusted only by factory trained gunsmiths.



**1** The Hammerli has a miniature Martini action. To drop the breechblock (10), squeeze the lever latch (30) at rear underside of the grip. When the lever (24) is moved forward, it cocks the hammer (25), drops the breechblock, and actuates the extractor (20).



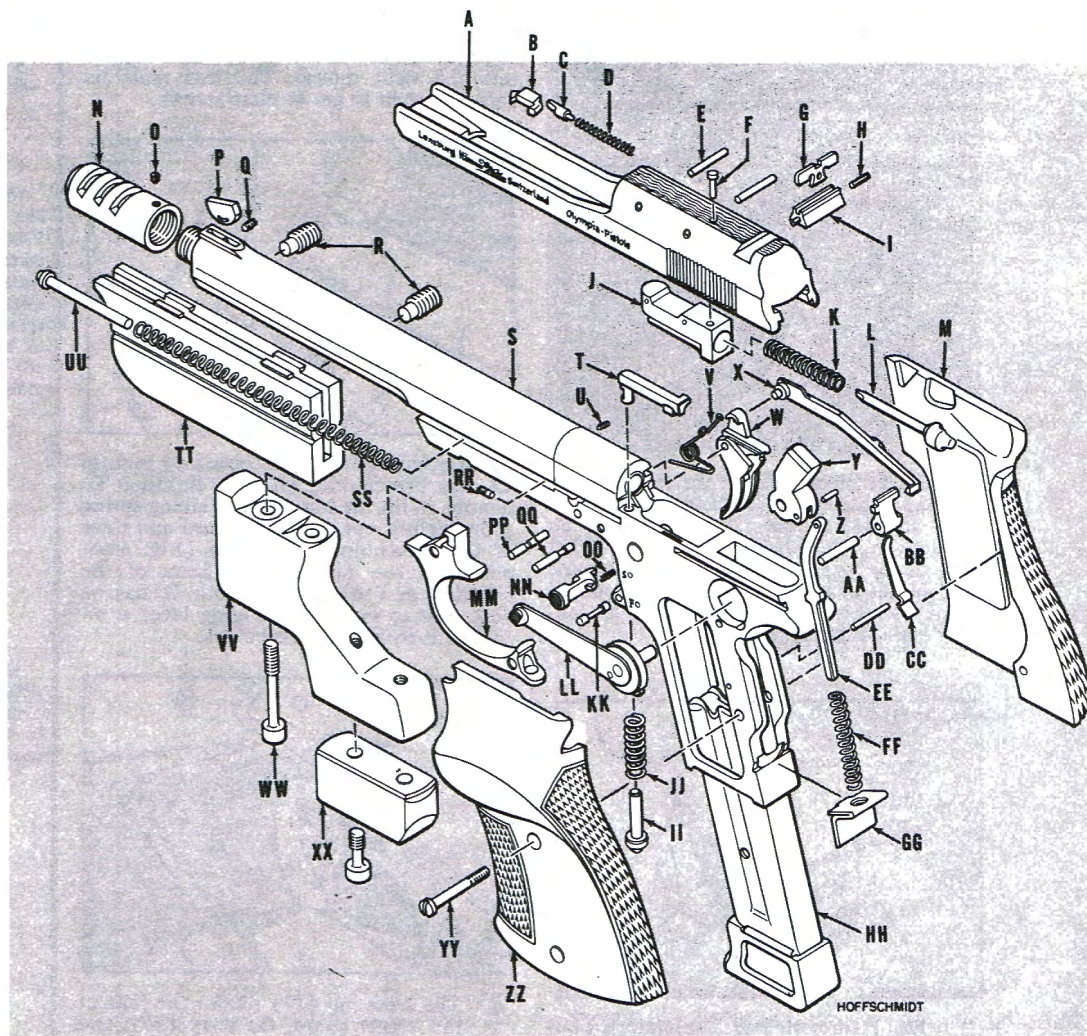


# THE HAMMERLI WALTHER OLYMPIA

By E. J. Hoffschmidt

## LEGEND

A—Slide  
B—Extractor  
C—Extractor plunger  
D—Extractor spring  
E—Firing pin housing pins  
F—Firing pin retaining pin  
G—Rear sight  
H—Rear sight adjusting screws  
I—Rear sight base  
J—Firing pin housing  
K—Firing pin spring  
L—Firing pin  
M—Right-hand grip  
N—Muzzle brake  
O—Muzzle brake set screw  
P—Front sight  
Q—Front sight set screw  
R—Weight-retaining screws  
S—Barrel and receiver  
T—Ejector  
U—Trigger stop set screw  
V—Trigger spring  
W—Trigger  
X—Trigger bar  
Y—Hammer  
Z—Hammer strut pin  
AA—Sear pin  
BB—Sear  
CC—Sear spring  
DD—Sear spring pin  
EE—Hammer strut  
FF—Hammer spring  
GG—Hammer spring seat  
HH—Magazine  
II—Trigger guard plunger  
JJ—Plunger spring  
KK—Trigger guard pin  
LL—Safety catch  
MM—Trigger guard  
NN—Magazine catch  
OO—Magazine catch spring  
PP—Trigger pin



QQ—Trigger stop pin  
RR—Trigger stop screw  
SS—Recoil spring  
TT—Front weight  
UU—Recoil spring guide

VV—Secondary weight  
WW—Weight retaining screws (long)  
XX—Small weight  
YY—Grip screw  
ZZ—Left-hand grip



THE 1936 Olympic games in Berlin witnessed the beginning of an amazing record of consistent accuracy. In that year, the first five winners in the rapid-fire matches won their laurels with the then-new Walther Olympia .22 caliber automatic pistol. Since that time, the Olympia design has become the overwhelming choice of International shooters.

Of course the war put the Walther plants in Germany out of the gun business, and Fritz Walther moved to Switzerland after the war. He sold the manufacturing rights for the Olympia to the Hammerli Arms Co. of Lenzburg, Switzerland, and was consulting engineer for the firm. Walther picked the right firm to carry on the Olympia production, for the Hammerli guns have been renowned for their accuracy and workmanship for a long, long time. The gun is so similar that many parts of the Hammerli Olympia are interchangeable with the original Walther Olympia.

*E. J. HOFFSCHMIDT has an extensive background as a gunsmith, engineering draftsman, and researcher, with a particular interest in automatic pistols.*

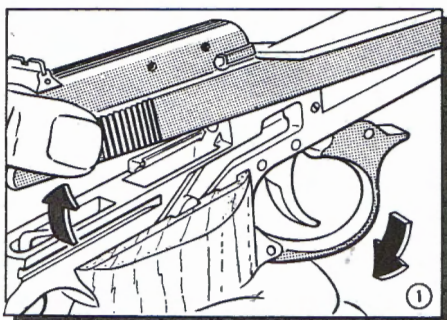
There are two models currently being manufactured; one, the Special Olympia with a 9½-inch barrel and a trigger pull of 1½ pounds, and the Standard Olympia, with a 7½-inch barrel and a trigger pull of at least 33 ounces.

The pistol is one of the few that has been expressly designed for target shooting. The gun is not for plinking. The adjustable grip, the trigger pull, and the sear mechanism were all designed for one purpose—to allow the shooter to make the highest possible score over a challenging course of fire.

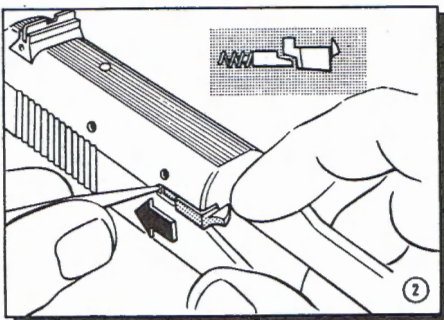
On the earlier model Hammerli Olympia, the front sight is adjustable for elevation, and the rear sight for windage, but the new model now available incorporates an Americanized rear sight. That is, the rear sight is adjustable for elevation and windage. The addition of a hold-open latch and buffer spring also improve the pistol a great deal. The lack of a hold-open latch in the earlier model makes it awkward to comply with the open-bolt rule enforced at most ranges. Like its predecessor, the Hammerli Olympia is made in .22 long rifle and .22 short. While the .22 caliber ammunition does

not have the kick of the larger center-fire ammunition, it is powerful enough to get the gun off the target. The muzzle brake and weights are added to combat this thrust. A muzzle brake of this type tends to keep the barrel down. While the weights have the same effect, they perform another function, too. The weights have a steadying influence, allowing the gun to be swung more easily from target to target during Olympic rapid-fire.

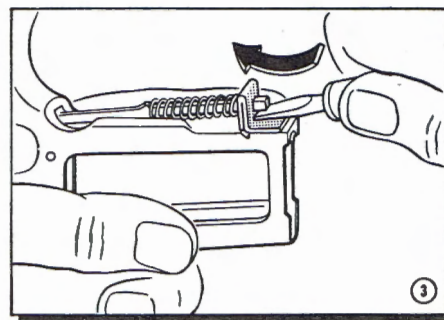
Since the pistol is a blowback-operated weapon, there is no locking mechanism to make the take-down procedure involved. The only point in the take-down that might be called unorthodox is the method used to remove the recoil spring and spring guide. The front end of the receiver has to be sprung away from the barrel a bit to free the end of the spring guide from its stop in the receiver. This is accomplished by driving a brass wedge or screwdriver between the barrel and the front of the receiver. While this may seem to be deforming the receiver, it is nevertheless the method used at the factory. The receiver is spread so little that it does not harm the gun. ♦ ♦ ♦



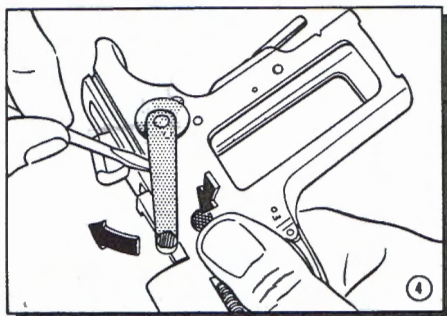
Remove the magazine and check chamber to be sure the gun is empty. Remove the weights. Pull down on the front of the trigger guard (MM), push it to the side until it catches on a lip in the receiver (S). Draw the slide to the rear, lift it up off the receiver, and ease it forward over the barrel.



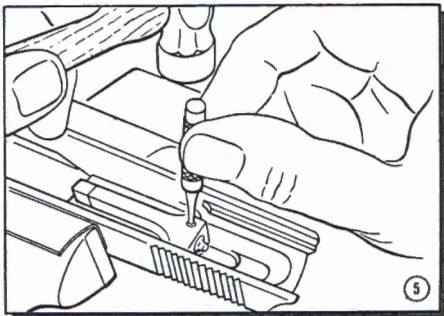
The extractor (B) is retained by a spring-loaded plunger (C). Using a small screwdriver, push the plunger back into the slide (A). If the slide is turned on its side, the extractor will then drop out. Ease up on the plunger (C) and it will come out with its spring (D).



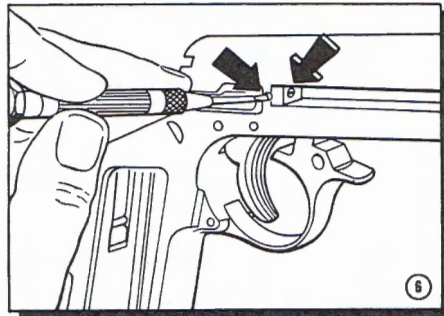
Removing the hammer spring seat (GG) is a bit tricky. First pull the trigger and ease the hammer to fired position, to take the tension off the hammer spring (FF). Push up hard as shown at the same time; lift the seat free from its notch in the receiver.



To remove the safety, lower the hammer (Y) to fired position. Depress the magazine catch (NN), lift the catch (LL) a bit as shown, to prevent it scratching the finish, and rotate it up over the edge of the receiver to the position illustrated. The catch will then spring free of the receiver.

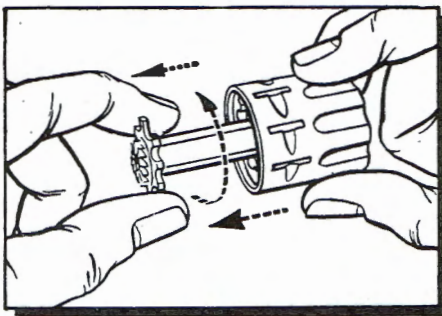


A spare firing pin (L) and firing pin spring (K) are supplied with each new gun. To remove the old parts, hold the slide (A) upside down in a vise, and tap the firing pin retaining pin (F) out, as shown. The firing pin and spring can then be lifted out of the slide.



The trigger pull on the Olympia is not adjustable, but the amount of travel can be limited. The trigger stop screw (RR) can be reached only with a long thin screwdriver, but its set screw (U) can be reached from the outside, as shown.

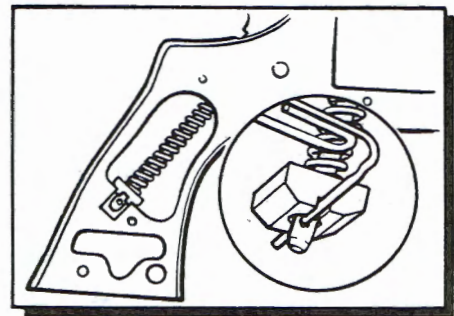




**1** Remove center pin (1) and cylinder (2) from frame. Remove extractor (3) after pushing it out of cylinder as far as possible with center pin and rotating it ½ turn in either direction, then withdrawing



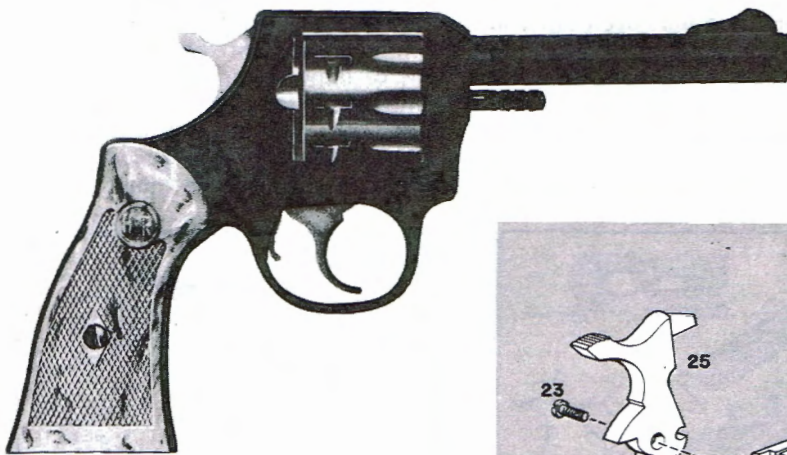
**2** Drive out guard and sear pin (4) and front guard pin (12). These pins are knurled on one end and care should be taken to drive them out from the left and replace them from the right. Use proper size punch to avoid burring pin holes



**3** Remove grip screws (18) and grips (19). Remove mainspring assembly (20a) by moving hammer back toward cocked position until hole at bottom of mainspring guide (21) protrudes beneath mainspring seat (22). Secure mainspring by placing piece of wire through hole. Release hammer and drop out mainspring

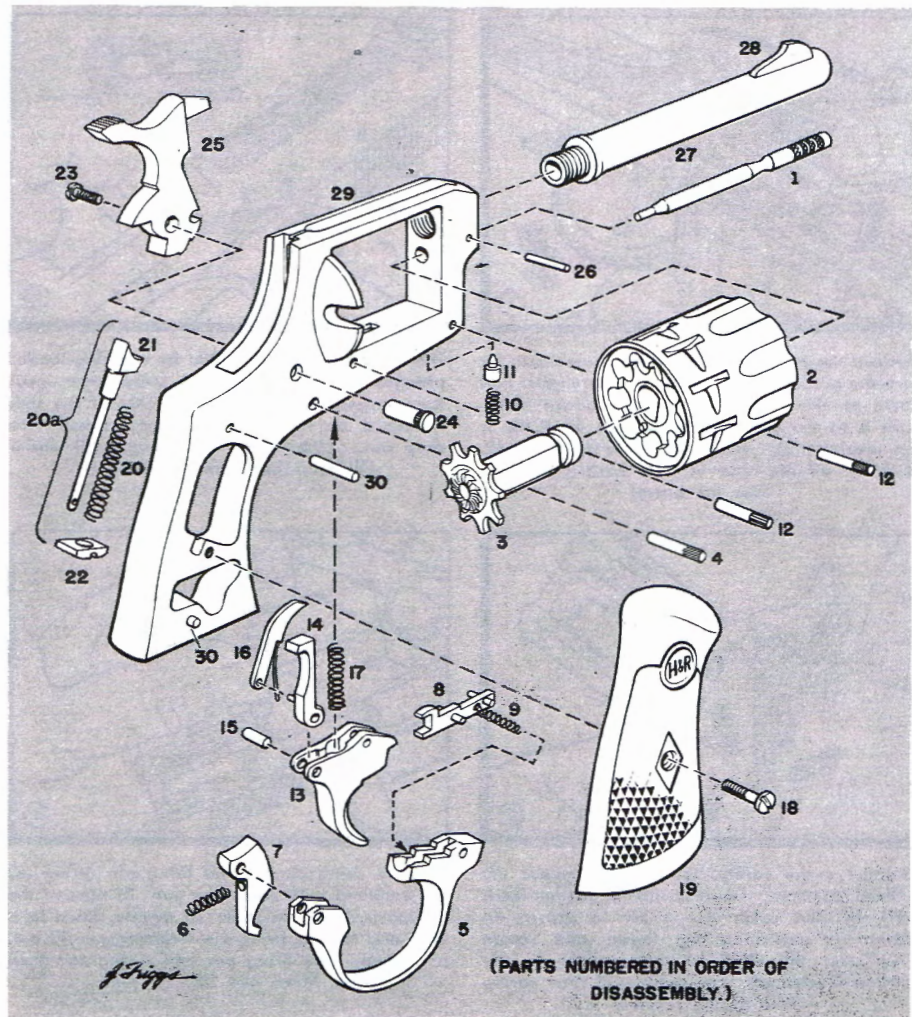
# Harrington & Richardson Model 922

By James M. Triggs

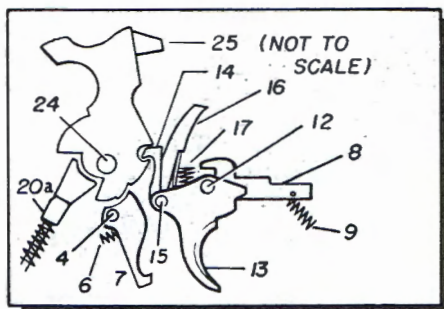


## LEGEND

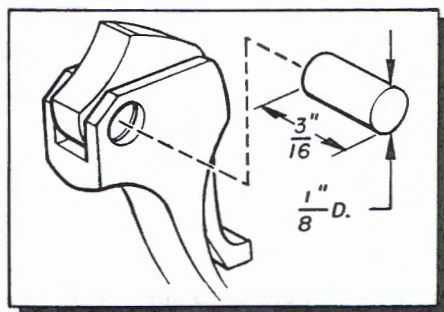
1. Center pin
2. Cylinder
3. Extractor
4. Guard and sear pin
5. Trigger guard
6. Sear spring
7. Sear
8. Cylinder stop
9. Cylinder stop spring
10. Center pin plunger spring
11. Center pin plunger
12. Trigger and front guard pins (2)
13. Trigger
14. Lifter
15. Lifter pin
16. Lever and spring assembly
17. Trigger spring
18. Grip screws (2)
19. Grips (2)
- 20a. Mainspring assembly
20. Mainspring
21. Mainspring guide
22. Mainspring seat
23. Hammer screw
24. Hammer screw stud
25. Hammer
26. Barrel retaining pin
27. Barrel
28. Front sight
29. Mainframe
30. Grip pins (2)



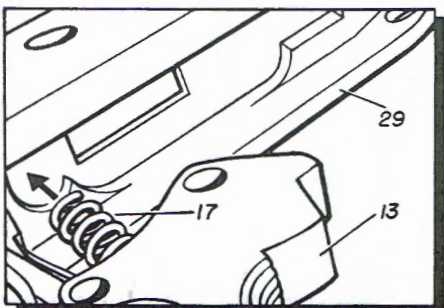




**4** Remove trigger guard (5), cylinder stop (8), and stop spring (9), sear (7), sear spring (6), center pin plunger spring (10), plunger (11), from mainframe. Drive out trigger pin (12) and remove trigger assembly [trigger (13), trigger spring (17), lifter (14), lifter pin (15), lever and spring assembly (16)]. Diagram shows relative position of these parts assembled. Remove hammer screw (23) and gently drive out hammer screw stud (24) using care not to damage stud threads. Remove hammer (25). Removal of barrel should not be attempted except by a gunsmith.



**5** In reassembling, replace hammer first. Sear spring, sear, and trigger guard must be assembled before installation in frame, using slave pin through sear and trigger guard. Length of slave pin should not exceed width of trigger guard. Cylinder stop spring must be inserted into stop spring hole in trigger guard before assembling guard to frame.



**6** When reinstalling trigger assembly, end of trigger spring must be in line with spring seat in bottom of trigger guard slot in frame. Guide lifter into position between hammer and frame with small screwdriver and press trigger assembly up into frame until pin holes line up. Secure by replacing trigger pin (12). Trigger guard, sear, and cylinder stop assembly is secured by replacing front guard pin (12) and guard and sear pin (4). The slave pin holding sear and guard for assembly should be driven out when replacing guard and sear pin (4). Note: By making extra long slave pins with finger loops it is possible to speed up preliminary assembly and disassembly operations when adjustments are required. When functioning is satisfactory, install permanent pins —

## Budget Gun Box

THIS is a quality gun box that can be made inexpensively. Any strong wood can be used but mahogany or walnut finished with varnish appears particularly handsome.

Cut the top, bottom, end, and side pieces with care to obtain close fitting joints. Top and bottom pieces of the box are rabbeted on the ends and edges to receive box ends and sides. End pieces are rabbeted on the edges and grooved for accessory drawer and gun tray.

For assembly, I used Weldwood Resorcinol on all joints. Side panels were secured with 1" brads to tie the box together while the adhesive set. Linked bands of innertube pulled tightly around the box help hold joints tight. After the adhesive has set, dress the edges and the joints and round the corners to a 1/4" radius.

After the box is fully assembled and the glue has set, saw it apart to form the lid. The saw kerf and dressing of edges removes about 1/8" of wood. This is filled by soft sponge-rubber weatherstrip around the edge of the cut, except at the top hinge area. Attach weatherstrip with contact cement. Lid is attached with a full-length piano hinge across the top of the box.

Arrange partitions in the accessory tray to suit personal requirements. Partitions should be glued and nailed in place. Felt or thin sponge lining in compartments protects and quiets loose items when box is moved.

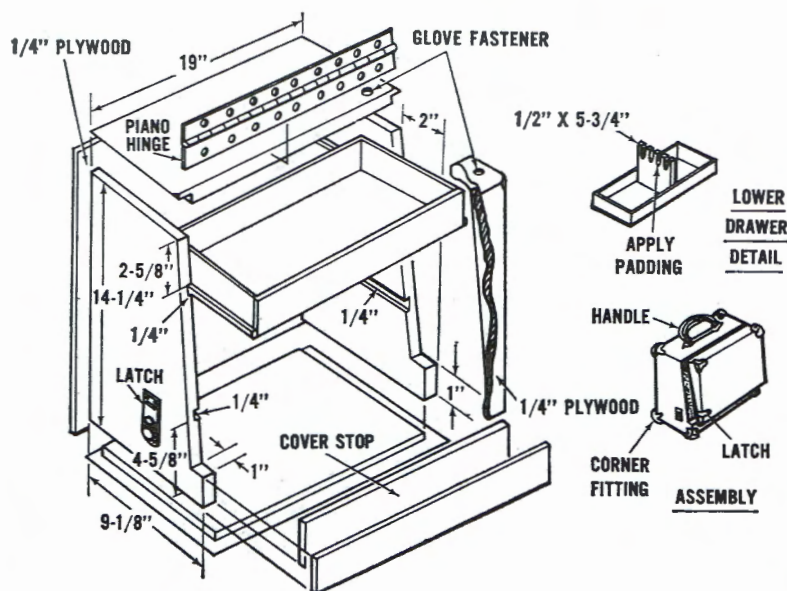
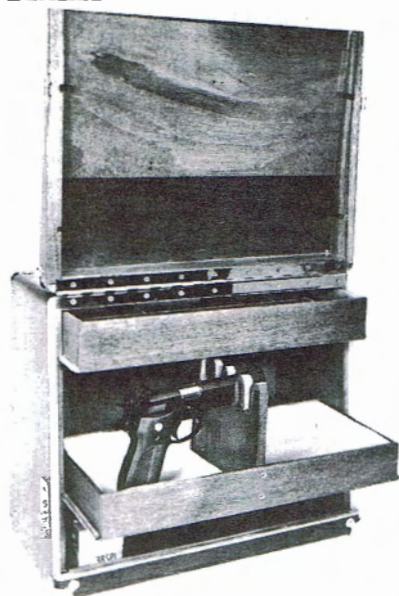
The gun tray has a 4-gun capacity

and component parts are glued and nailed. Seven 1" No. 6 screws hold the barrel-rest in the center of tray.

A spotting scope may be permanently mounted on inside of the box cover. It should be mounted near the edge of the lid so, with the lid closed, the scope fits into the space beneath the gun tray.

Mount 2 sections of a glove fastener to hold the lid open on either side of lid hinge.

Handle, latch, glove fastener, and corner fittings may be obtained from luggage supply firms.—RICHARD P. DEMERSE



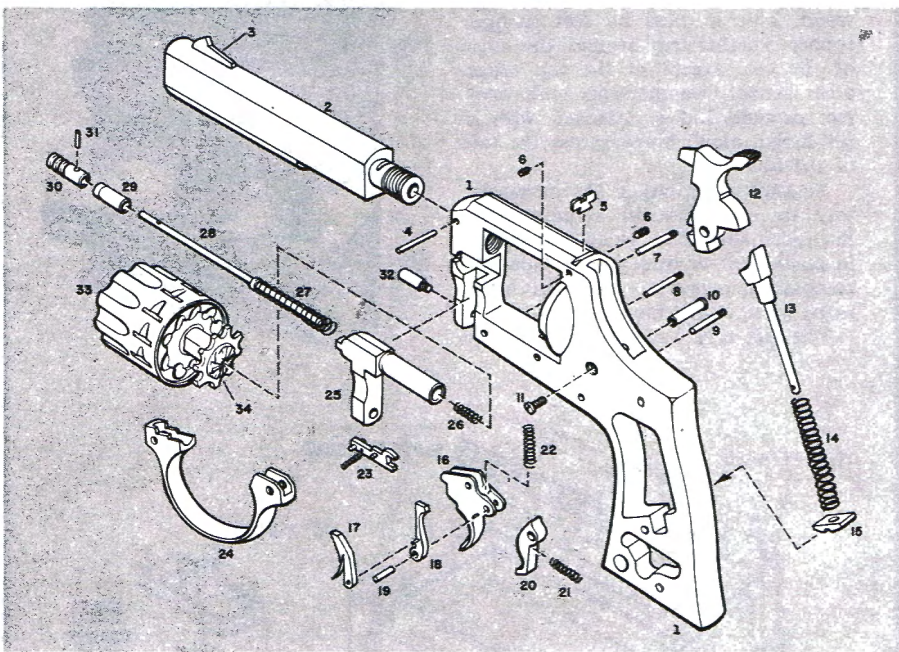


# H & R MODEL 929 "SIDE-KICK" REVOLVER

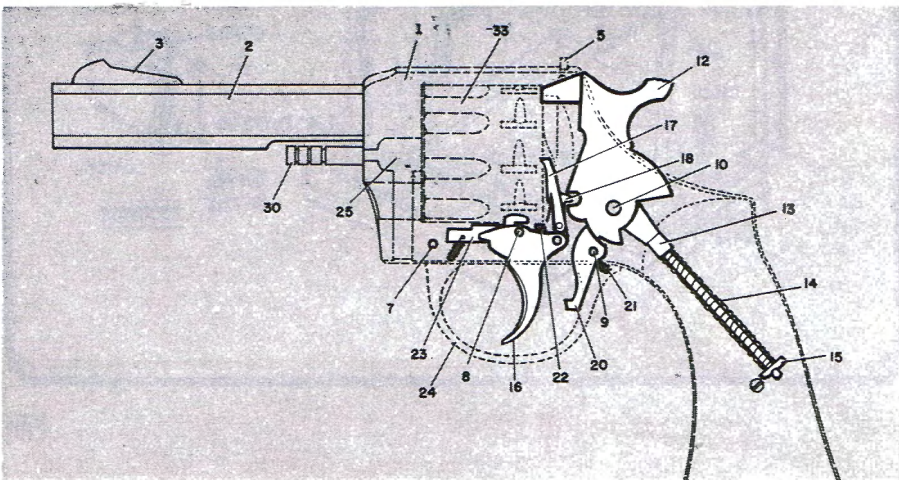
By JAMES M. TRIGGS

## Parts Legend

- |                                    |                               |                            |
|------------------------------------|-------------------------------|----------------------------|
| 1. Frame                           | 12. Hammer                    | 23. Cylinder stop assembly |
| 2. Barrel                          | 13. Mainspring guide          | 24. Trigger guard          |
| 3. Front sight                     | 14. Mainspring                | 25. Swingout arm assembly  |
| 4. Barrel retaining pin            | 15. Mainspring seat           | 26. Center pin spring      |
| 5. Rear sight leaf                 | 16. Trigger                   | 27. Extractor spring       |
| 6. Rear sight screws (2)           | 17. Lever and spring assembly | 28. Center pin             |
| 7. Front trigger guard pin         | 18. Lifter                    | 29. Center pin guide       |
| 8. Trigger pin                     | 19. Lifter pin                | 30. Center pin head        |
| 9. Rear trigger guard and sear pin | 20. Sear                      | 31. Center pin head pin    |
| 10. Hammer screw stud              | 21. Sear spring               | 32. Swingout arm pivot pin |
| 11. Hammer screw                   | 22. Trigger spring            | 33. Cylinder               |
|                                    |                               | 34. Extractor              |



Note: Grips and 2 grip screws are not shown.



THE Harrington & Richardson Model 929 "Side-Kick" double-action revolver was introduced in 1956. Of solid-frame construction with swing-out cylinder, the Model 929 is chambered for the .22 short, long, and long rifle rim-fire cartridges. Cylinder capacity is 9 cartridges. There have been a number of minor changes in the design of this revolver since its introduction. When ordering parts, it is necessary to give the arm's complete serial number with letter prefix and the name of the part.

## Disassembly Procedure

Check revolver to be sure it is unloaded. Remove swingout arm pivot pin (32) from front end of frame (1). Pull hammer (12) back to lower cylinder stop, swing out cylinder and extractor assembly (33 & 34) with swingout arm assembly (25). Disassembly of extractor (34) from cylinder is not recommended and is unnecessary for normal cleaning.

Drift out front trigger guard pin (7) and rear trigger guard and sear pin (9) from *left to right*. Remove trigger guard (24) with cylinder stop assembly (23) and sear (20) with sear spring (21).

Remove grip screws and grips (not shown). Cock hammer (12) and place a nail or small pin through hole in lower end of mainspring guide (13) where it protrudes through mainspring seat (15). Release hammer and drop mainspring, guide, and seat assembly out of frame.

Drift out trigger pin (8) from *left to right* and drop trigger (16), trigger spring (22), lever and spring assembly (17), lifter (18) and lifter pin (19) out of frame. Remove hammer screw (11) and drift hammer screw stud (10) out of frame from *left to right*. Remove hammer (12) from top of frame. Reassemble in reverse. Note that all pivot pins are knurled at their right ends and should be replaced in frame from right to left with knurls at right.

Phantom of the Model 929 revolver shows the relationship of all interior lock mechanism parts when assembled in the frame. Lever and spring assembly (17) pivots on a pin set into the left side of the lifter (18). ■



# H&R SELF-LOADING PISTOL

INTRODUCED in 1916 by Harrington & Richardson of Worcester, Mass., the H & R cal. .32 self-loading pistol was based on design patents held by the English gunmaking firm of Webley & Scott. The Webley & Scott version of this pistol featured an outside hammer, but the model offered by H & R was a true hammerless, striker-fired arm.

The H & R cal. .32 pistol was one of the first American-made pocket pistols to have a magazine safety or disconnecter to prevent firing of the gun when the magazine was removed. However, this feature was subsequently abandoned, so H & R pistols of this type will be found both with and without the magazine safety device.

Mechanical details of interest in this pistol include the cartridge indicator pin on the extractor which extends above the top of the slide when there is a cartridge in the chamber and the thumb safety which is pushed upward rather than downward to disengage it. The latter procedure is contrary to usual practice in pocket automatic pistols.

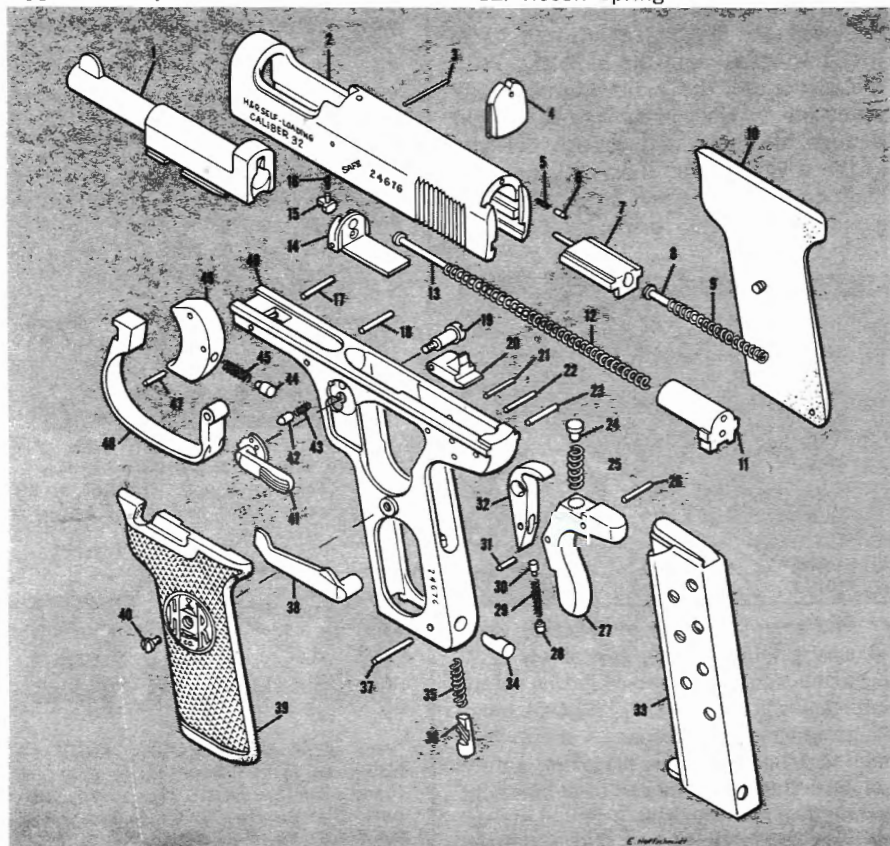
Production of the H & R cal. .32 self-loading pistol was discontinued in 1939. Approximately 40,000 were made.



By E. J. HOFFSCHMIDT

## LEGEND:

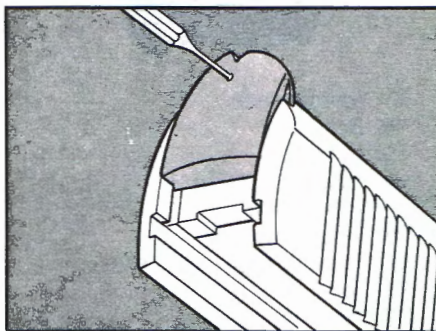
1. Barrel
2. Slide
3. Bolt face retainer pin
4. Slide endplate
5. Detent spring
6. Endplate detent
7. Firing pin
8. Spring guide
9. Firing pin spring
10. Right grip
11. Slide return block
12. Recoil spring
13. Spring guide
14. Bolt face
15. Extractor
16. Extractor spring
17. Front guard pin
18. Trigger pin
19. Trigger guard hinge screw
20. Sear
21. Sear pin
22. Sear stop pin
23. Grip safety stop pin
24. Sear spring follower
25. Sear spring
26. Grip safety hinge pin
27. Grip safety
28. Spring plunger
29. Magazine safety spring
30. Trigger bar detent
31. Magazine safety pin
32. Magazine safety
33. Magazine
34. Magazine catch
35. Magazine catch spring
36. Magazine release button
37. Magazine catch pin
38. Trigger bar
39. Left grip
40. Grip screw
41. Thumb safety
42. Safety catch detent
43. Detent spring
44. Trigger spring plunger
45. Trigger spring
46. Trigger
47. Trigger stop pin
48. Trigger guard
49. Frame



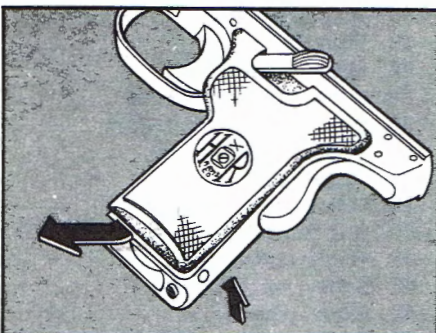




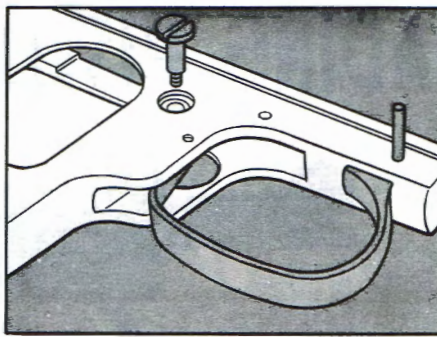
**1** Takedown of the cal. .32 H&R pistol is not difficult. The barrel (1) is retained by the front of the trigger guard (48). The guard has a notch to allow the toe of the magazine floorplate to be used as a lever in disassembly. Pull trigger guard down slightly as shown, and push barrel and slide off. When reassembling, it is not necessary to pull down the guard. The cam on the underside of the barrel will push the trigger guard down.



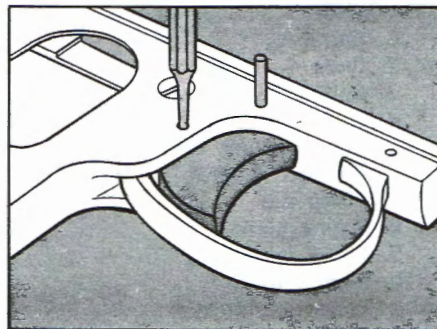
**2** Once the slide endplate (4) is removed, the firing pin (7) and recoil spring (12) can be removed. To remove slide endplate, the endplate detent pin (6) must be depressed with a thin punch while the endplate is pushed up. Take care when the endplate is removed to prevent the slide return block (11) from flying out.



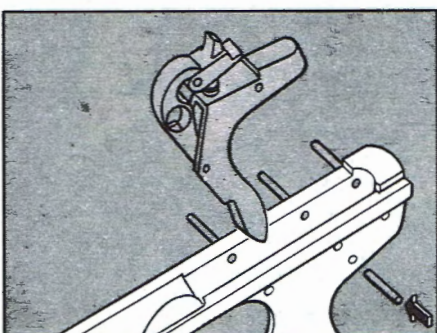
**3** The left hard rubber grip (39) is easily broken if removed improperly. First remove the grip screws (40). Remove the right grip (10) and the magazine (33). Put thumb safety (41) in up or "off" position. Through the magazine well, push the lower end of the left grip. When free of the magazine catch pin (37), slide it down and out from under the edge of the thumb safety. Do not force.



**4** The H&R sear mechanism is unique in that there is no mechanical connection between trigger (46) and trigger bar (38). To remove the trigger, it is first necessary to remove the trigger stop pin (47). There is a small hole in the right side of the frame. If a thin punch is inserted through the frame hole when the trigger is at rest, the trigger stop pin can be driven out. Then the trigger pin (18) can be removed.

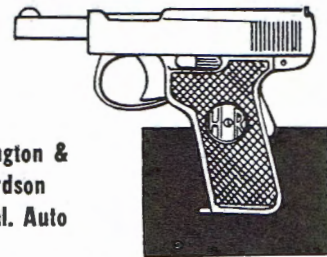


**5** When reassembling trigger guard (48), insert the front tang into the frame with the front guard pin (17) out. Push the rear end of the guard into place and insert the trigger guard hinge screw (19) through the frame and through the hole in the trigger guard. Then pull the front tang down slightly and drive the front guard pin (17) into place.



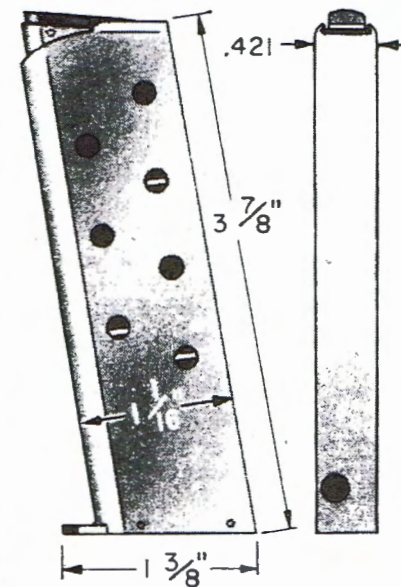
**6** The sear (20), sear spring (25), sear spring follower (24), grip safety (27), magazine safety (32), and magazine safety spring assembly parts (28) (29) (30), must all be assembled together as shown and held together with the magazine safety pin (31). This assembly can then be easily installed in the frame as a unit. Line up the grip safety hinge pin (26) and then drive in the others.

**Harrington & Richardson**  
**.32 Cal. Auto**

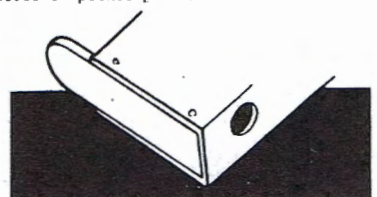


## PISTOL MAGAZINES

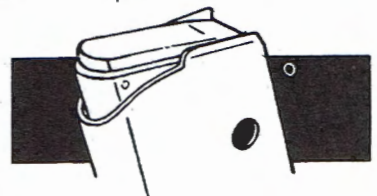
One of a series



At first glance this little pistol is a dead ringer for the Webley Metropolitan Police pistol, except that the H&R is hammerless and has a squeeze safety. While it is a simple, effective pocket pistol, automatics have never proved as popular as revolvers, so H&R stopped its manufacture quite some time ago. The gun features a cartridge indicator and a magazine safety that prevents its firing when the magazine is removed. These, plus 2 manual safeties, make the gun an excellent house or pocket pistol.



H&R magazines are sturdily made. The floorplate is pinned to the magazine body as shown. They can be best identified by the large magazine catch hole in the backstrap near the floorplate.



The shape of the magazine follower is another key to the identity of the H&R clip. It has a built-up double-step magazine follower. The rear third of the follower tapers down flush with the backstrap.—E. J. HOFF-SCHMIDT.



# HI-STANDARD DURA-MATIC PISTOLS

By JAMES M. TRIGGS

THE Hi-Standard Model M-100 Dura-Matic pistol was introduced in 1954 by the High Standard Mfg. Corp., Hamden, Conn. Made to sell at a moderate price, this blowback-operated, striker-fired pistol is chambered for the economical .22 long rifle cartridge, regular or high speed. It was designed for plinking and informal target shooting. Choice of 4½" and 6½" barrel lengths was available. The sights are fixed, but the rear sight can be drifted to right or left in its slot for windage adjustment. The detachable magazine holds 10 cartridges.

Pushing the cross-bolt safety to the left, or "on" position, locks the slide shut and also immobilizes the striker pin. When striker mechanism is cocked, a red dot on rear of the striker pin is visible at the rear end of striker sleeve.

An improved barrel locking system for this pistol was introduced in 1957. It was then redesignated Model M-101.

The J. C. Higgins Model 80 autoloading pistol sold by Sears, Roebuck & Co. is mechanically identical to the Model M-101. Disassembly instructions given here apply to that pistol also.



## Disassembly Procedure

Press in magazine catch (25) and withdraw magazine from grip (35). Draw slide (37) rearward and lock open by moving safety (32) to left. Safety acts as slide lock [safety is "on" when red enamel on right end of safety is *not* visible—safety locks striker pin (43) and slide]. Check chamber to be sure pistol is unloaded before proceeding with disassembly.

To remove barrel (1), depress barrel lock plunger (9) on front right side of frame (4). Unscrew barrel nut (28) and pull barrel up and out of its seat in frame. Slots in barrel nut permit use of coin or screwdriver for tightening or loosening nut. Barrel of M-101 is removed by unscrewing nut (28). A barrel lock is not provided in this model.

Move safety (32) to right, or "off" position, to release slide (37) and draw slide forward until its rear end is about ½" forward of rear of frame. Then, while holding the slide, pull the trigger to disengage sear plunger (15) from striker pin (43). Draw slide off frame and remove slide spring (42), striker pin (43), and striker spring (44) from rear of slide. Note striker pin and spring rest inside of slide spring and that flat surface of striker pin faces slot in bottom of slide.

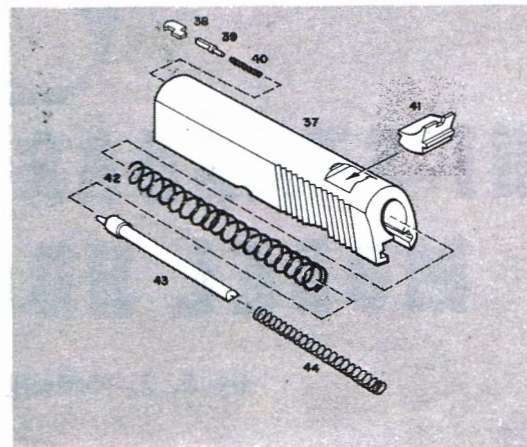
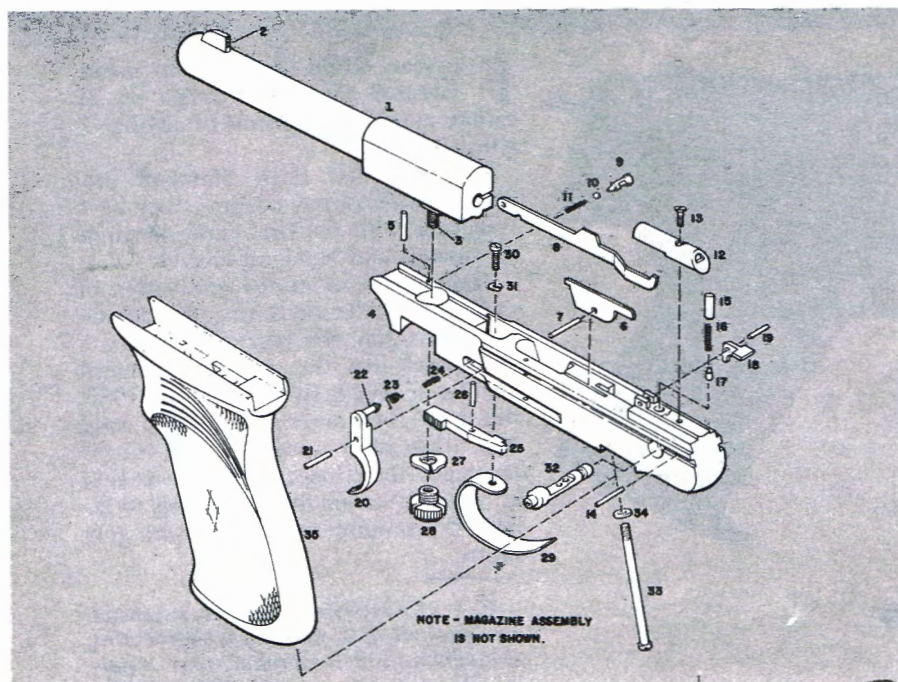
To remove grip from frame, unscrew grip bolt (33), and remove bolt and its washer (34) from bottom of grip.

The above constitutes sufficient disassembly for normal cleaning purposes. Lock parts within frame are easily removed, but disassembly further than that given here is not recommended except for repair or replacement of parts. Reassembly in reverse.

## Parts Legend

- |                                      |                                     |
|--------------------------------------|-------------------------------------|
| 1. Barrel*                           | 24. Magazine catch spring           |
| 2. Front sight                       | 25. Magazine catch                  |
| 3. Barrel set screw                  | 26. Magazine catch pin              |
| 4. Frame*                            | 27. Barrel nut lock washer*         |
| 5. Barrel lock plunger pin*          | 28. Barrel nut*                     |
| 6. Ejector                           | 29. Trigger guard                   |
| 7. Ejector pin                       | 30. Trigger guard screw             |
| 8. Sear bar                          | 31. Trigger guard screw lock washer |
| 9. Barrel lock plunger*              | 32. Safety*                         |
| 10. Barrel lock ball*                | 33. Grip bolt                       |
| 11. Barrel lock ball spring*         | 34. Grip bolt washer                |
| 12. Striker sleeve                   | 35. Grip                            |
| 13. Striker sleeve screw             | 36. Magazine assembly (not shown)   |
| 14. Striker sleeve screw locking pin | 37. Slide                           |
| 15. Sear plunger                     | 38. Extractor                       |
| 16. Sear spring                      | 39. Extractor plunger               |
| 17. Safety detent                    | 40. Extractor spring                |
| 18. Sear                             | 41. Rear sight                      |
| 19. Sear pin                         | 42. Slide spring                    |
| 20. Trigger                          | 43. Striker pin (firing pin)*       |
| 21. Trigger pin                      | 44. Striker spring                  |
| 22. Trigger pull pin                 |                                     |
| 23. Trigger spring                   |                                     |

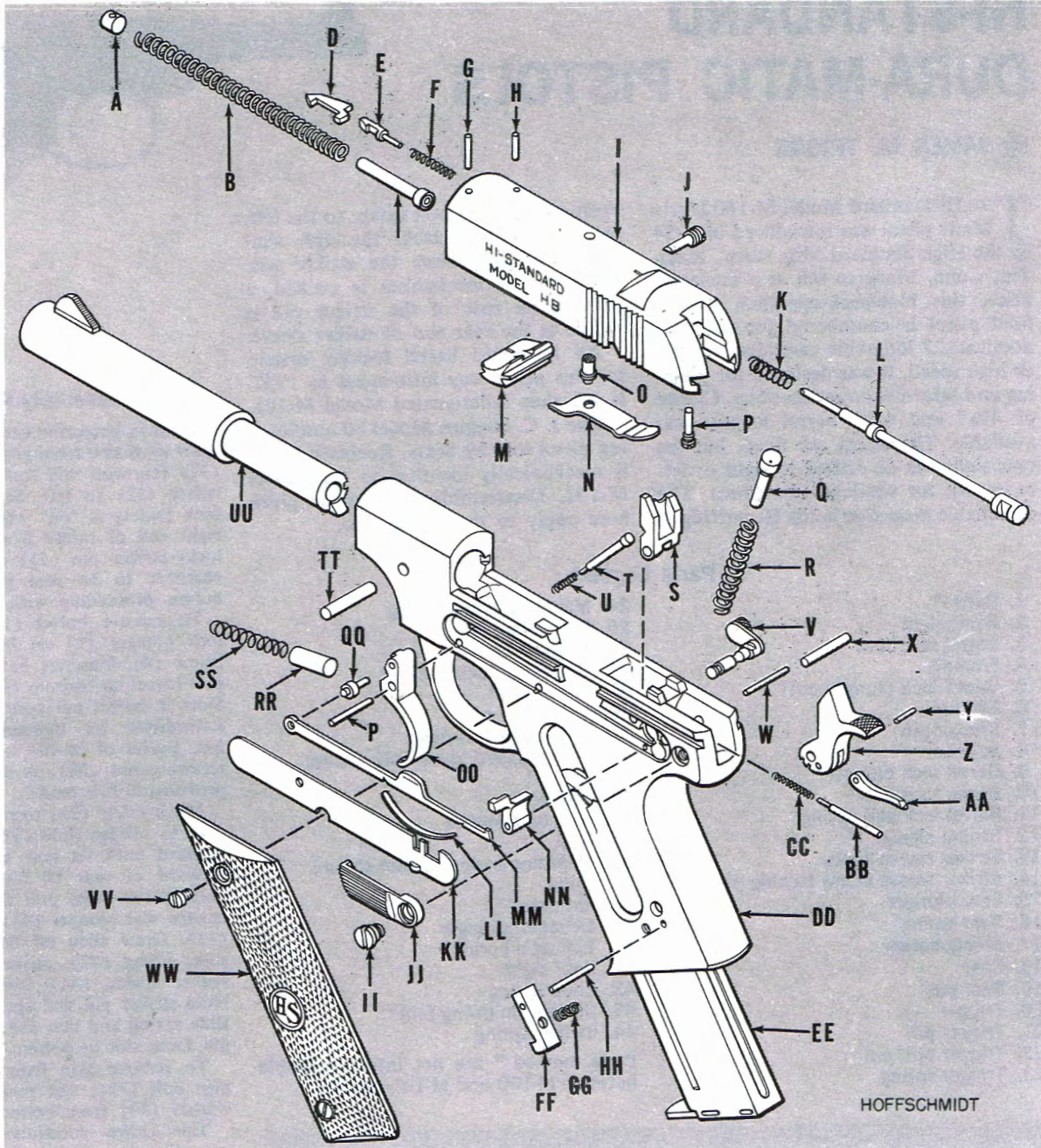
Parts marked \* are not interchangeable between M-100 and M-101 models.





## LEGEND

A—Recoil spring stop  
 B—Recoil spring  
 C—Recoil spring guide  
 D—Extractor  
 E—Extractor plunger  
 F—Extractor spring  
 G—Recoil spring stop pin  
 H—Extractor pin  
 I—Slide  
 J—Assembly lock screw  
 K—Firing pin spring  
 L—Firing pin  
 M—Rear sight  
 N—Assembly lock plunger  
 O—Assembly lock  
 P—Firing pin retaining screw  
 Q—Mainspring guide  
 R—Mainspring  
 S—Slide stop  
 T—Slide stop plunger  
 U—Slide stop spring  
 V—Takedown latch  
 W—Sear pin  
 X—Hammer pin  
 Y—Hammer strut pin  
 Z—Hammer  
 AA—Hammer strut  
 BB—Sear plunger  
 CC—Sear spring  
 DD—Frame  
 EE—Magazine  
 FF—Magazine catch  
 GG—Magazine catch spring  
 HH—Magazine catch pin  
 II—Safety catch screw  
 JJ—Safety catch  
 KK—Side plate  
 LL—Trigger bar spring  
 MM—Trigger bar  
 NN—Sear  
 OO—Trigger  
 PP—Trigger pin  
 QQ—Pull pin  
 RR—Trigger spring plunger  
 SS—Trigger spring  
 TT—Trigger pin  
 UU—Barrel pin  
 VV—Barrel  
 WW—Grip screw  
 XX—Left-hand grip



HOFFSCHMIDT



# HI-STANDARD MODEL HB

By E. J. Hoffschmidt

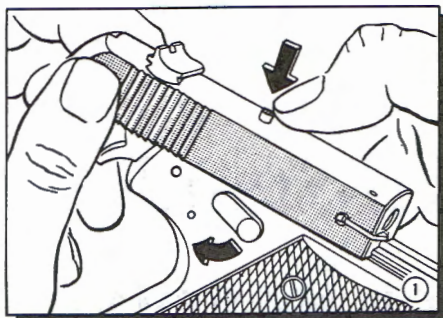
FOR years, High Standard has manufactured the widest range of .22 caliber autoloading pistols of any handgun producer.

Not only has High Standard produced a wide variety of guns, they have kept pace with the times and demands of shooters and handgun lovers.

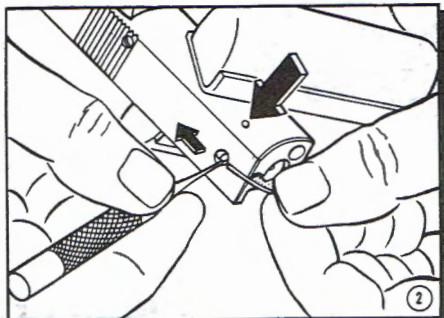
High Standard started production of their first automatic during the depression. This gun, the Model B, looked a great deal like the defunct Hartford pistol produced between 1929 and 1930. But it was well made and priced a good deal below its competitors, so it caught on. Since the Model B they have kept up a steady stream of new models to delight the shooter and confuse the gunsmith.

E. J. HOFFSCHMIDT has an extensive background as a gunsmith, engineering draftsman, and researcher, with a particular interest in automatic pistols.

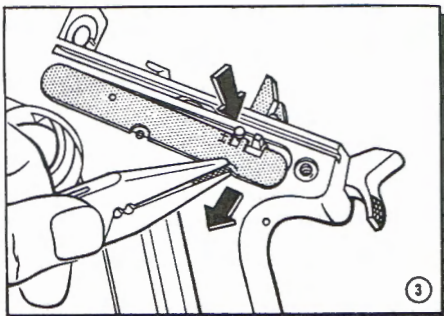




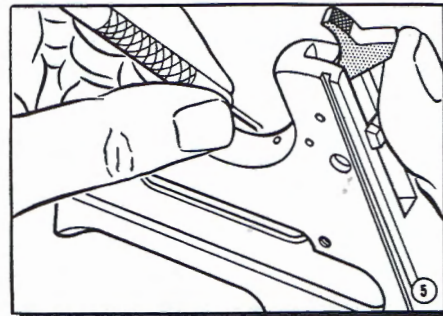
Remove the magazine, check the chamber to be sure it is empty. Pull the slide (I) to the rear until it stops. Depress the assembly lock plunger (N) and push the slide forward. Now depress the takedown latch (V) and pull the slide back off the frame



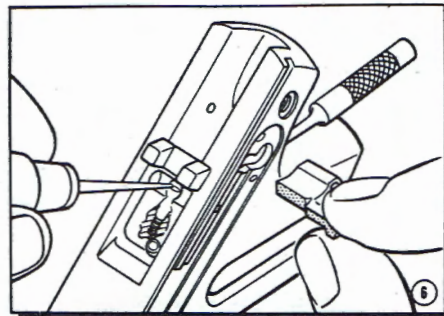
To remove the extractor (D), first remove the extractor retaining pin (H). Then insert a thin screwdriver or pointed tool, as shown. Push the extractor plunger (E) back into the slide. Now remove the extractor (D) by rotating it in toward the firing pin



Never remove the takedown latch (V) while the slide (I) is on the frame, as it would cause a condition that is difficult to remedy. The side plate (KK) retains the takedown latch (V) on some models and must be removed as shown, to free the latch



The trigger (OO) can be removed only after the pull pin (QQ) has been driven out. Insert a thin drift pin into the hole above the trigger pin. Move the trigger a bit until the drift is seated in the hole in the trigger. Drive out the pull pin (QQ), then the trigger pin (PP)



Because the mainspring is powerful, it must be kept in check when removing the hammer (Z) and sear (NN). To do so, cock the hammer and insert a thin pin into the hole in the back strap. Release the hammer and drive out the hammer pin (X) and the sear pin (W)

To replace the sear, push the sear spring (CC) and plunger (BB) back into the frame far enough to be caught through the opening for the takedown lever. While holding the plunger as shown, replace the sear (NN) and sear pin (W)

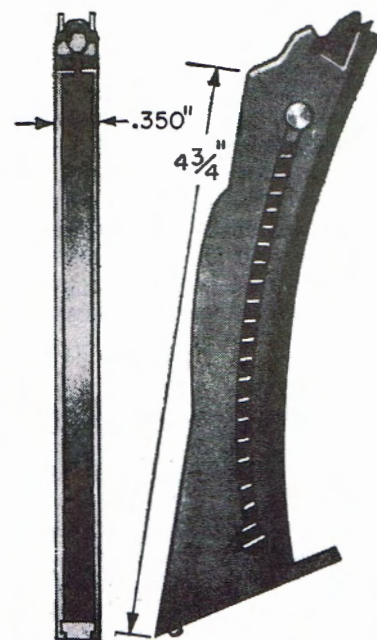
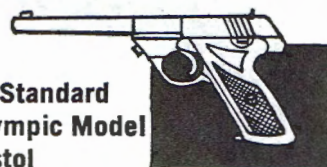
The Model HB shown here is really the original model with an outside hammer added. It makes an ideal plinker, for it is comparatively small and compact. Its outside hammer is an excellent safety feature, since you can tell at a glance whether the gun is cocked. And a safety that locks the sear makes it all the safer. As a target gun it suffers from a short grip, but as a fishing or hunting companion the reverse angle on the grip makes for easy removal from a coat or trousers pocket. With a 4½-inch barrel, it weighs only 31 ounces, light enough to stick in your pocket and forget about.

Like other current .22 caliber automatics, Hi-Standards are blowback operated, since the .22 cartridge does not develop enough pressure to require a more involved lock breech mechanism. Hi-Standard pistols are generally well made and finished. While they are easy to repair, care must be taken in ordering parts, since in the hammer gun series there are three different hammers and five different sears.

It is interesting to note, and a problem to proofreaders, that it's "High Standard" when referring to the manufacturer and "Hi-Standard" when referring to the gun. ♦ ♦ ♦

## PISTOL MAGAZINES

### Hi-Standard Olympic Model Pistol



The oddly-shaped magazine shown was made for the early Hi-Standard Olympic Model pistol chambered for the .22 short cartridge. For production reasons, the opening in the gun frame was made for the .22 long rifle magazine.



To compensate for this, the magazine lips and follower were reduced in length for the .22 short cartridge.



The floorplate is detachable to facilitate cleaning interior of the magazine.—E. J. HOFFSCHMIDT





# Hi-Standard Sentinel Revolver

By Thomas E. Wessel

**T**HE Hi-Standard Sentinel, introduced in 1955 by the High Standard Manufacturing Corp. of Hamden, Conn., met the demand for a moderately-priced 9-shot swing-out cylinder double-action revolver chambered for the economical .22 rimfire cartridge.

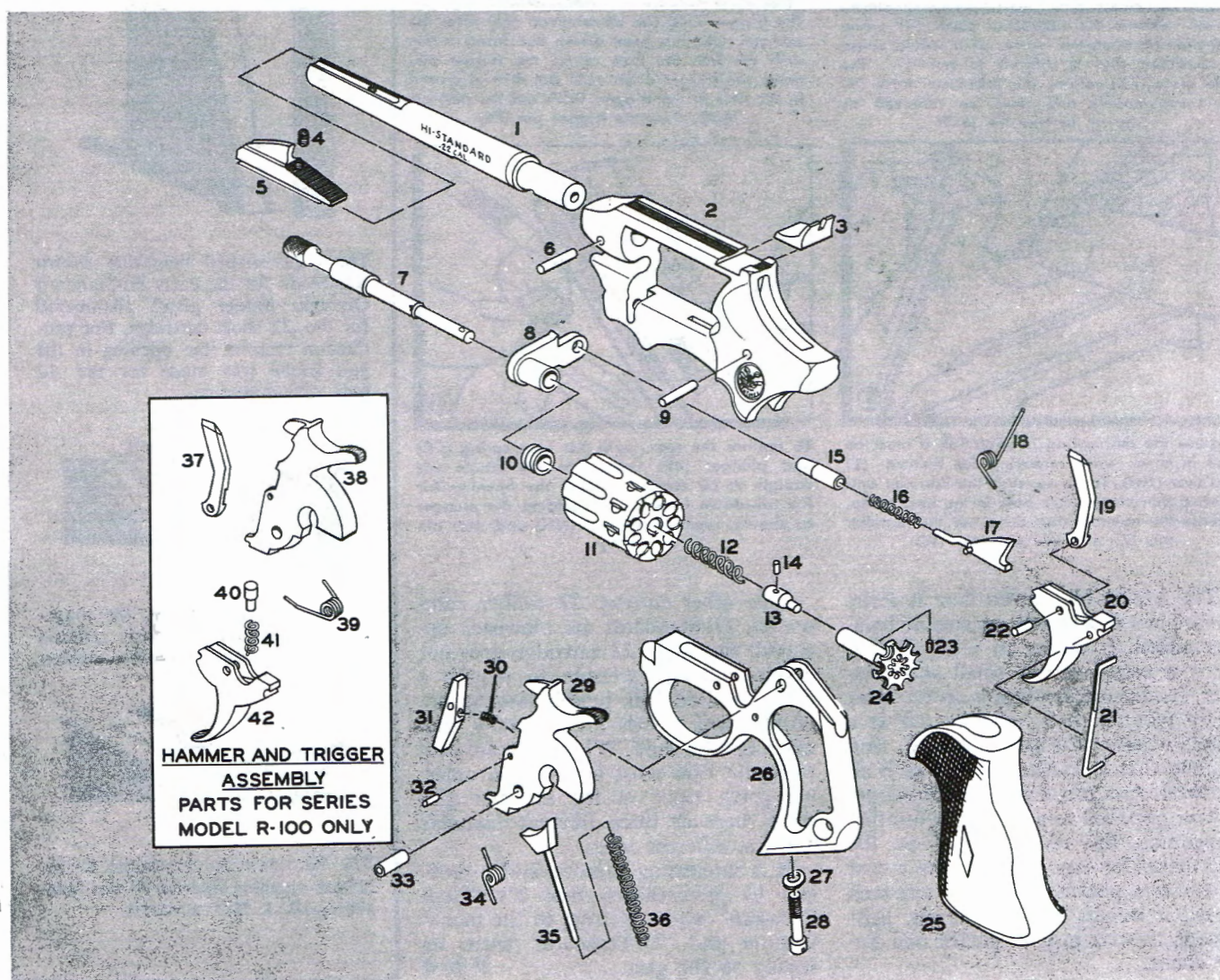
THOMAS E. WESSEL of Whippany, N. J., is a technical illustrator long interested in firearms.

Modern in concept, it features a lightweight frame of aluminum alloy with barrel and cylinder of steel.

It is designed for use with either regular or high-speed cal. .22 short, long, or long rifle cartridges, with chambers counterbored to surround the cartridge rims. Hammer and trigger are of case-hardened steel, and virtually unbreakable coil springs are used throughout.

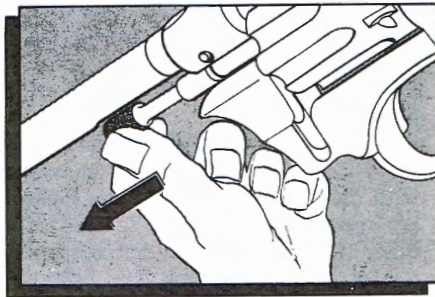
The hammer is of rebounding type, and the lock mechanism incorporates an automatic safety block to prevent accidental discharge should the gun be dropped on a hard surface.

Front sight is of the square-blade Patridge pattern with the square-notch rear sight adjustable for windage by tapping it to left or right in its dovetail slot.

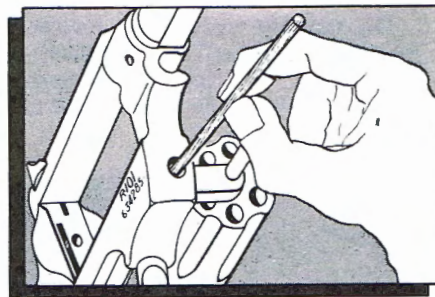




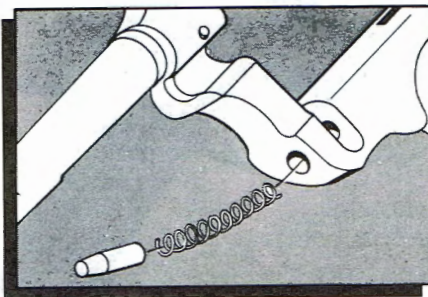
To date the Sentinel has been offered in 2½", 3", 4", and 6" barrel lengths and in several finishes, including traditional blue as well as full nickel, turquoise, gold, and pink. Grips are of brown or white plastic, with the latter also available in smooth finish to simulate natural ivory. The 2½" Snub-Barrel Sentinel is regularly furnished with modified hammer spur and quick-draw front sight to eliminate snagging when drawing from the pocket.



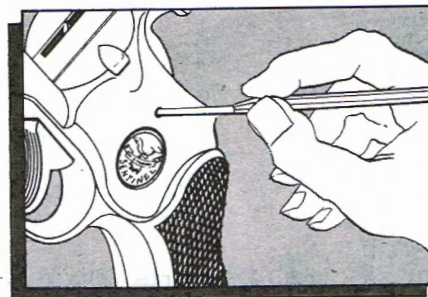
**1** To swing out cylinder (11) for loading, pull ejector rod (7) forward and thence left. This is also first step for disassembly



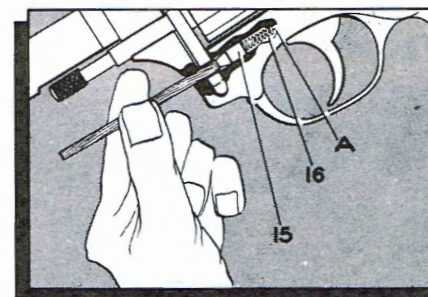
**2** Next insert a small hardwood dowel into hole in front portion of frame (2) to depress link pivot pin (15). Pull cylinder assembly left until wood dowel prevents any further movement left. Withdraw dowel and place thumb over hole in frame. This will prevent cylinder stop spring (16) and link pivot pin from flying out of the hole as cylinder assembly is separated from the frame



**3** Up-end the revolver and shake out the link pivot pin and cylinder stop spring



**4** Loosen or remove grip screw (28) and drift out hammer pivot pin (9) with small flat-nosed punch. Entire trigger guard (26) and assembly may now be removed from frame. All internal parts are now exposed. Exercise care when executing this portion of the disassembly that cylinder stop (17) does not drop out and become lost



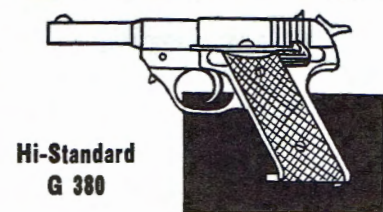
**5** Reassembly is accomplished in reverse order. When reinserting the cylinder stop spring (16) insure that it slides onto arm portion (A) of cylinder stop; otherwise it becomes jammed and may be deformed

## Parts Legend

- |                                  |                         |
|----------------------------------|-------------------------|
| 1. Barrel                        | 24. Ejector             |
| 2. Frame                         | 25. Grip                |
| 3. Rear sight                    | 26. Trigger guard       |
| 4. Front sight set screw         | 27. Grip lock washer    |
| 5. Front sight                   | 28. Grip screw          |
| 6. Barrel pin                    | 29. Hammer              |
| 7. Ejector rod                   | 30. Hammer pawl spring  |
| 8. Crane                         | 31. Hammer pawl         |
| 9. Hammer pivot pin              | 32. Hammer pawl pin     |
| 10. Cylinder bushing             | 33. Hammer sleeve       |
| 11. Cylinder                     | 34. Trigger spring      |
| 12. Cylinder lock plunger spring | 35. Hammer spring guide |
| 13. Cylinder lock plunger        | 36. Hammer spring       |
| 14. Cylinder lock plunger pin    |                         |
| 15. Link pivot pin               |                         |
| 16. Cylinder stop spring         |                         |
| 17. Cylinder stop                |                         |
| 18. Hand spring                  |                         |
| 19. Hand                         |                         |
| 20. Trigger                      |                         |
| 21. Hammer safety stop           |                         |
| 22. Trigger pivot pin            |                         |
| 23. Ejector alignment dowel      |                         |

Hammer and trigger parts specific to Model R-100

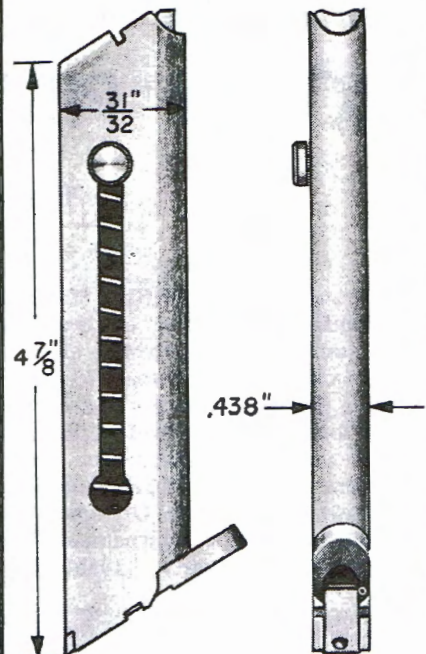
- |                            |
|----------------------------|
| 37. Hand                   |
| 38. Hammer                 |
| 39. Hand spring            |
| 40. Trigger spring plunger |
| 41. Trigger spring         |
| 42. Trigger                |



Hi-Standard  
G 380

## PISTOL MAGAZINES

One of a series



In 1947, Hi-Standard brought out a cal. .380 ACP pistol. It was blowback-operated and followed the lines of the then-current G-series of cal. .22 pistols. It did not become popular since it was too large for a pocket pistol, too expensive for a plinker, and not a target pistol. Like other Hi-Standard pistols, the G 380 is well made and finished. The magazine is built a great deal like the normal cal. .22 magazine, except it is about 20% thicker.



The G 380 magazine has a removable floor-plate which allows its disassembly for easy cleaning.



The follower is unusual in design and unlike that of any other large-caliber pistol magazine. Stamped from sheet metal, its cross section resembles a railroad rail. The 3-piece construction of the backstrap is also unusual and is another good point of identification.—EDWARD J. HOFFSCHMIDT





# HI-STANDARD SUPERMATIC TROPHY PISTOL

By Thomas E. Wessel

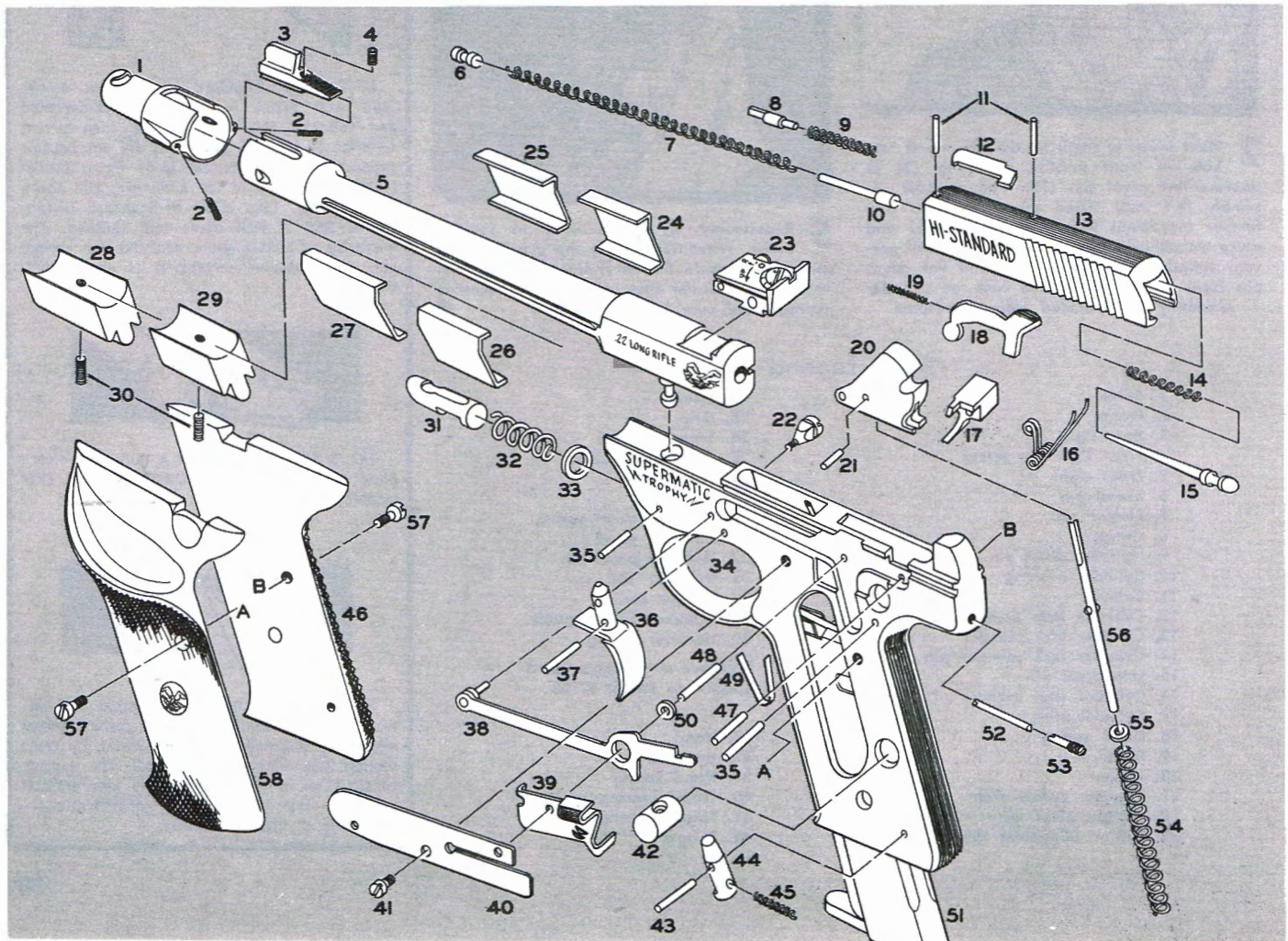
**I**N late summer of 1958 High Standard Manufacturing Corp. of Hamden, Conn., introduced 4 ten-shot detachable-clip cal. .22 semi-automatic pistols featuring detachable barrels and an improved lockwork to provide crisp and uniform sear disengagement. These guns were designated Supermatic Trophy, Supermatic Citation, Olympic Citation, and Supermatic Tournament. The first 3 guns are regularly available with

10", 8", and 6¾" barrels. The fully-adjustable rear sight is mounted on the slide of the 6¾"-barrel version, whereas the rear sight is mounted on the breech ring of the 8" and 10" barrels. The detachable barrel stabilizer minimizes muzzle jump, thereby aiding in quicker recovery of aim between shots. Screw adjustments are provided to vary weight of trigger pull and amount of backlash. The frame straps are grooved.

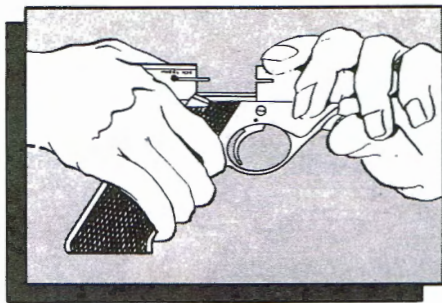
The Supermatic Trophy and Citation models are chambered for the cal. .22 long rifle cartridge and conversion units are available to permit use of the cal. .22 short cartridge. The Olympic Citation is chambered for the cal. .22 short cartridge and is convertible to cal. .22 long rifle with a conversion unit. Factory installation of these conversion units is required. The Supermatic Trophy is the deluxe model featuring high-polish blue finish, checkered walnut grips, and gold-plated trigger and safety button. Lettering is gold inlaid. The other models have checkered plastic grips, and triggers and safety buttons are finished blue. Walnut grips are available at extra cost in lieu of the plastic grips.

The Supermatic Tournament, offered in cal. .22 long rifle only, is available with 4½" or 6¾" barrel. The lockwork is substantially identical to that of the other models, but does not incorporate trigger pull adjustment. The barrels are not equipped with integral or detachable stabilizers. The fully-adjustable rear sight is mounted on the slide. Grips are of checkered plastic with walnut grips available at extra cost.

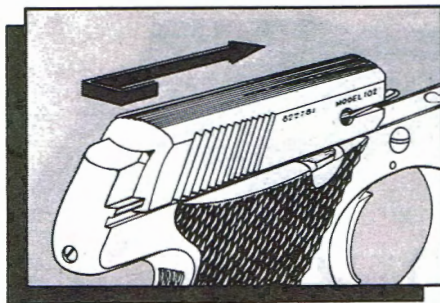
Disassembly procedure for the 4 models is substantially identical, thus instructions covering the Supermatic Trophy are basically appropriate to the other models.



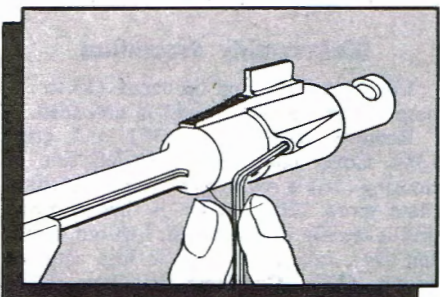




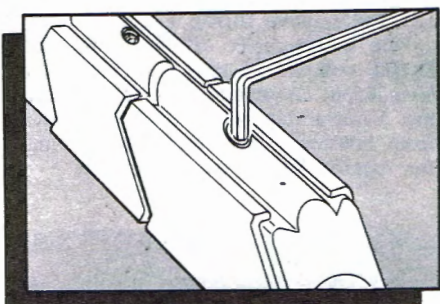
**1** To disassemble Supermatic Trophy pistol, first press magazine catch (44) and withdraw magazine (51). Pull back slide (13) and lock it in place by pushing up slide lock lever (18). At same time inspect gun to insure that no cartridge remains in chamber. Next, move safety (39) to "On" position. This locks hammer (20) and sear (17), disconnects trigger (36), and completely separates sear bar (38) from sear. Grasp pistol as shown (left-handed persons should use a reversed grip) and depress barrel takedown plunger (31) with thumb. Lift barrel (5) out of its bedding with a straight upward motion. If, after extensive shooting, it becomes difficult to remove barrel by thumb pressure alone, press takedown plunger against a padded but solid object



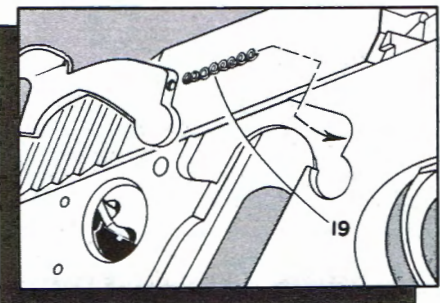
**2** Continue disassembly by pulling back slide a short distance to release slide lock and ease slide forward off frame (34)



**3** For top performance stabilizer (1) should be removed and cleaned every 300 rounds. Clean with tool furnished by manufacturer. Remove stabilizer by inserting proper-size Allen wrench (provided with gun) into stabilizer set screws (2) and back them off until they are clear of engaging slots in muzzle end of barrel. Stabilizer will then slide off



**4** Forward weight and balance of gun may be adjusted by inserting proper-size Allen wrench (also provided with gun) into barrel weight set screw or screws (30) and loosening until either or both weights are movable within brackets (24 through 27). The weight may then be moved forward or backward as barrel groove permits. When optimum balance is achieved, tighten set screws with the wrench into detents provided



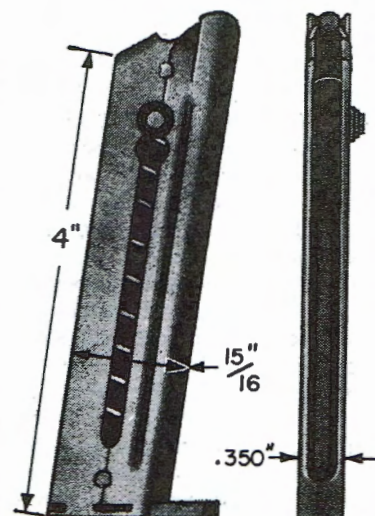
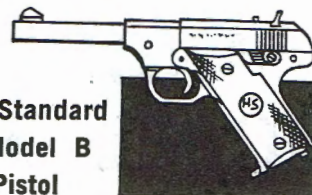
**5** Should it become necessary to remove right grip (46) for replacement or exposure of working parts, slide lock lever (18) comes out very easily. Care must be exercised not to lose slide lock spring (19) as it is very small and hardly noticeable. When reinserting slide lock, make sure that this spring is properly seated in its hole in frame (34)

### Parts Legend

1. Stabilizer
2. Stabilizer set screw (2)
3. Front sight
4. Front sight screw
5. Barrel
6. Driving spring plug
7. Driving spring
8. Extractor plunger
9. Extractor spring
10. Driving spring plunger
11. Driving spring plunger pin (2)
12. Extractor
13. Slide
14. Firing pin spring
15. Firing pin
16. Sear spring
17. Sear
18. Slide lock lever
19. Slide lock spring
20. Hammer
21. Hammer strut pin
22. Anti-backlash screw
23. Adjustable rear sight
24. Right bracket, short barrel weight
25. Right bracket, long barrel weight
26. Left bracket, short barrel weight
27. Left bracket, long barrel weight
28. Long barrel weight
29. Short barrel weight
30. Barrel weight screw (2)
31. Barrel takedown plunger
32. Barrel takedown plunger spring
33. Anti-backlash detent washer
34. Frame
35. Barrel takedown plunger pin
36. Trigger
37. Trigger pin
38. Sear bar and trigger pull pin assembly
39. Safety
40. Side plate
41. Side plate screw
42. Hammer strut anchor pin
43. Magazine catch pin
44. Magazine catch
45. Magazine catch spring
46. Right handgrip
47. Sear pin
48. Hammer pin
49. Sear bar spring
50. Safety spacer washer
51. Magazine
52. Sear adjustment screw plunger
53. Sear adjustment screw
54. Hammer spring
55. Hammer strut ring
56. Hammer strut
57. Grip screw (2)
58. Left handgrip

## PISTOL MAGAZINES

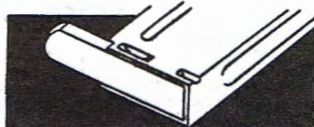
Hi-Standard  
Model B  
Pistol



The Model B was one of the first of the long line of Hi-Standard automatic pistols. It differs from later models in that it was designed more as a plinker than a serious target pistol. During World War II a number were purchased by the Army and Navy for training purposes.



Model B magazines can be readily identified. The seam of the magazine is on the same side as the loading button. The weld marks at the top and bottom of the seams are typical of Hi-Standard Model B magazines.



Other points of identity are the 2 long stab marks which retain the floorplate, and the depression stamped into the back strap.—E. J. HOFFSCHMIDT.



# HI-STANDARD MODEL D-100

By JAMES M. TRIGGS



**T**HE Hi-Standard Model D-100 pistol was introduced in 1962. Manufactured by the High Standard Mfg. Co., of Hamden, Conn., the Model D-100 has 2 over-under en-bloc barrels that tip down for loading. It is chambered for the cal. .22 long rifle cartridge and its lock mechanism is of hammerless, trigger-cocking type with ratchet to discharge the cartridges alternately.

The breech of this pistol is opened by lifting the stirrup hinged to the top of the barrel assembly. The barrel assembly can then be tipped down to expose the breech. Lifting the stirrup to its upward limit cams the extractor to the rear and, if done smartly, throws the cartridges or cartridge cases clear.

The Model D-100 pistol is designed for close range shooting.

A similar Hi-Standard pistol, Model DM-101, is made in cal. .22 Winchester Magnum Rimfire.

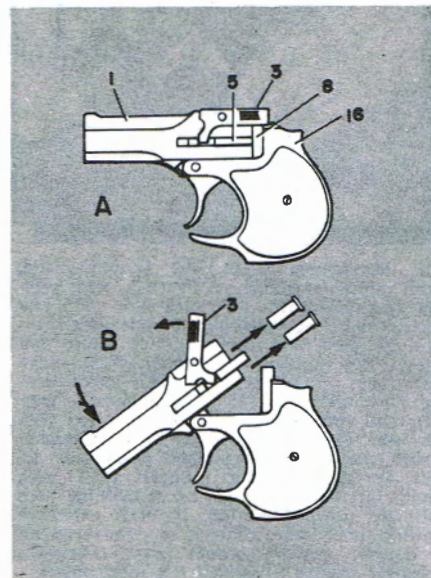
## Disassembly Procedure

Lift stirrup (3) and tip barrel (1) to expose breech. Be sure pistol is unloaded.

Remove grip screws (39) and grips (38). Cover plate (37) over left side of housing (16) is removed by removing cover plate screw (20). Action is then exposed and is readily disassembled. Lift out actuator (34), taking care not to lose actuator spring (35). Compress hammer spring (31) to permit removal of spring, hammer strut (33), and abutment (30) assembly from housing. Hammer (18) assembly may be removed intact from housing.

Barrel (1) assembly can be removed from frame (8) by removing barrel pivot pin (9). Extractor (5) is removed from barrel to rear. Remove stirrup pivot pin (2) and remove stirrup (3) from barrel.

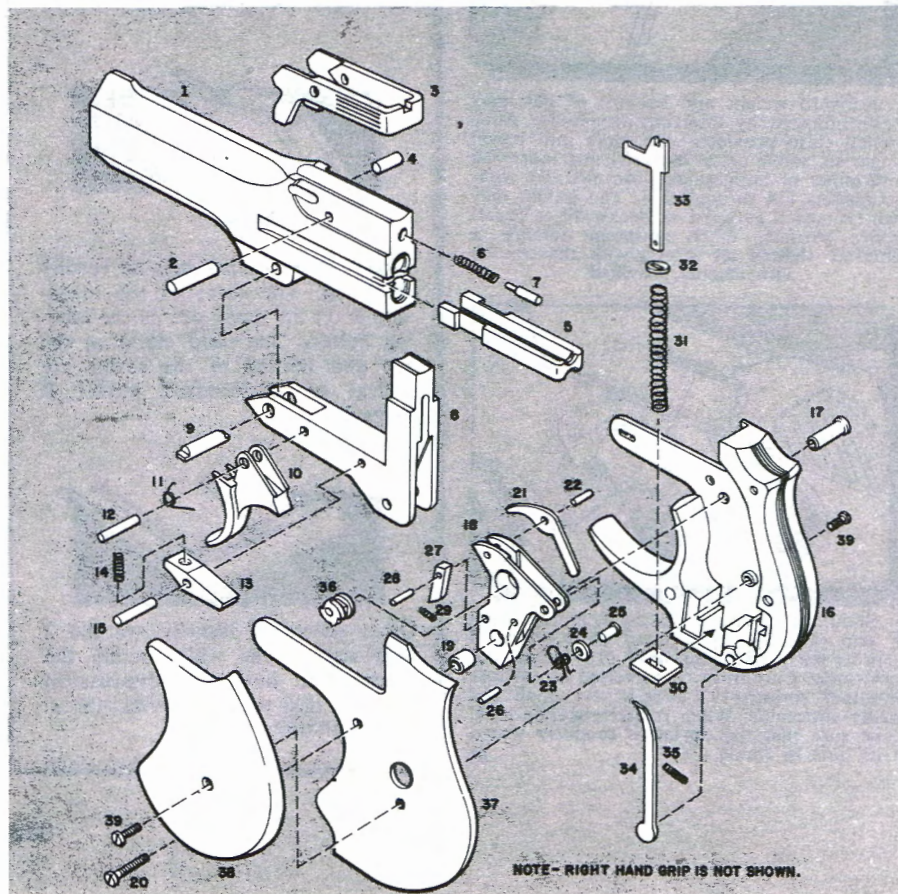
Due to simplicity of design of Model D-100, removal of grips and cover plate is sufficient disassembly for normal cleaning. Disassembly of hammer components from housing is not recommended unless for repairs. Reassemble in reverse.



The pistol is shown with breech locked and ready to fire (A), and with breech opened (B). Note that lifting the stirrup (3) moves extractor (5) to rear. Closing barrel will automatically retract extractor and lock stirrup over frame.

## Parts Legend

1. Barrel
2. Stirrup pivot pin
3. Stirrup
4. Stirrup roller
5. Extractor
6. Stirrup plunger spring
7. Stirrup plunger
8. Frame
9. Barrel pivot pin
10. Trigger
11. Trigger spring
12. Trigger pivot pin
13. Hammer safety block
14. Hammer safety block spring
15. Hammer safety block pin
16. Housing
17. Hammer pivot screw
18. Hammer
19. Hammer pivot sleeve
20. Cover plate screw
21. Striker
22. Striker pivot pin
23. Striker spring
24. Striker spring spacer washer
25. Striker spring retaining pin
26. Hammer strut pin
27. Hammer pawl
28. Hammer pawl pin
29. Hammer pawl spring
30. Hammer spring abutment
31. Hammer spring
32. Hammer strut washer
33. Hammer strut
34. Actuator
35. Actuator spring
36. Ratchet
37. Cover plate
38. Grips (2) (left grip only is shown.)
39. Grip screws (2)



NOTE - RIGHT HAND GRIP IS NOT SHOWN.



# HUNGARIAN MODEL 1937 PISTOL

By E. J. HOFFSCHMIDT

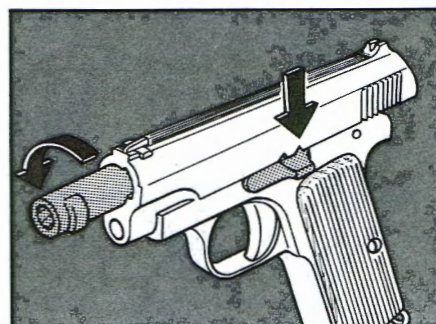


**I**NTRODUCED in 1937, the Hungarian Model 1937 (M37) automatic pistol was chambered for either the .32 ACP or the .380 ACP. Action is of Browning blowback design with exposed hammer. Magazine is detachable.

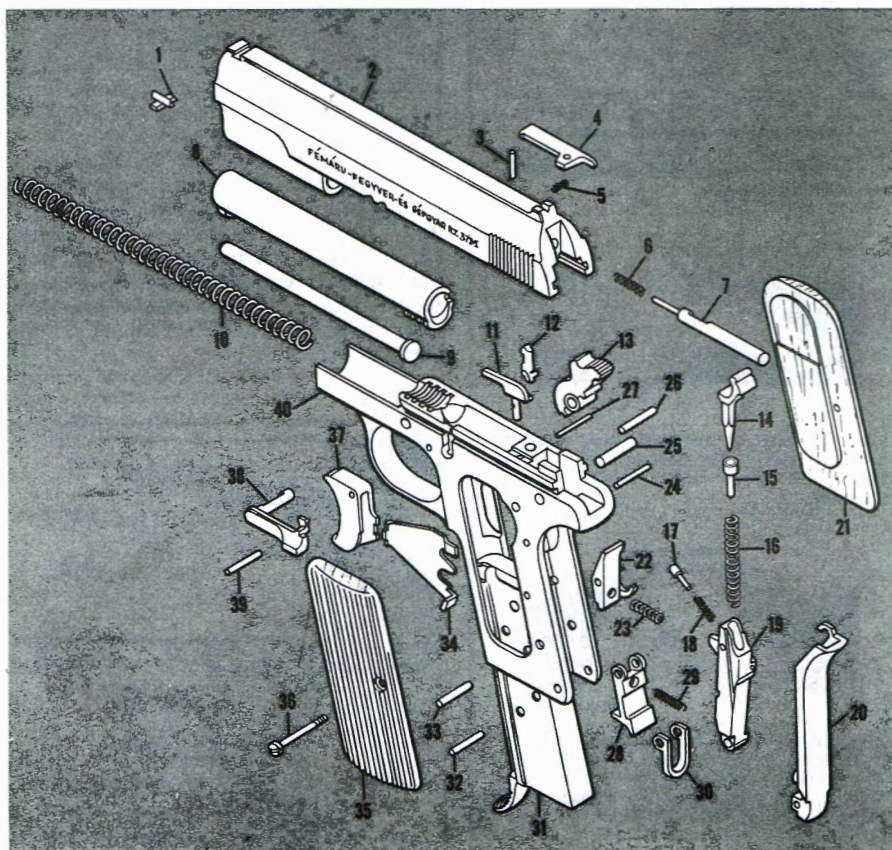
Slides of prewar M37 pistols are generally marked "FEMARU-FEGYVER-ES. GEPGYAR R.T. 37M." Translated this means Metalware, Small Arms and Machine Works, Inc. Model 37. Following the German occupation, this Budapest firm was integrated into the

German war economy and the M37 pistol in cal. .32 ACP was adopted by the Germans as a substitute standard military pistol. Slide markings were changed to "Pistole M37, Cal. 7.65 mm." plus the "jhv" code and a 2-digit numeral to indicate year of manufacture. On many guns the inscription "Kal." is found instead of "Cal."

M37 pistols made under German supervision have a manual safety in addition to the grip safety. The manual safety is lacking on prewar M37 pistols.



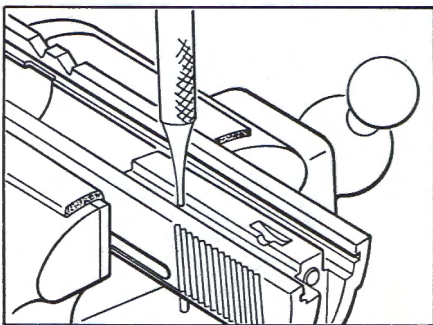
**1** To strip the M37, first step is to be sure gun is unloaded. Pull slide (2) to rear until slide stop (38) engages rear notch as shown. Rotate barrel (8) and pull it out of slide. Then release slide stop, ease slide off frame, and remove magazine.



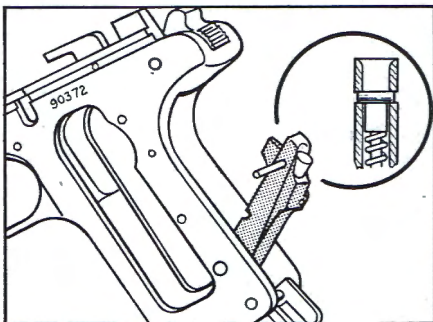
## Parts Legend

- |                           |                                    |
|---------------------------|------------------------------------|
| 1. Front sight            | 21. Right grip                     |
| 2. Slide                  | 22. Sear                           |
| 3. Extractor pin          | 23. Sear spring                    |
| 4. Extractor              | 24. Housing                        |
| 5. Extractor spring       | 25. Hammer pin retaining pin       |
| 6. Firing pin             | 26. Sear pin                       |
| 7. Firing pin spring      | 27. Disconnecter & ejector pin     |
| 8. Barrel                 | 28. Magazine latch                 |
| 9. Recoil spring guide    | 29. Latch spring                   |
| 10. Recoil spring         | 30. Lanyard loop                   |
| 11. Ejector               | 31. Magazine                       |
| 12. Disconnecter          | 32. Lanyard pin                    |
| 13. Hammer                | 33. Magazine catch and housing pin |
| 14. Hammer strut          | 34. Trigger bar                    |
| 15. Spring follower       | 35. Left grip                      |
| 16. Hammer spring         | 36. Grip screw                     |
| 17. Plunger               | 37. Trigger                        |
| 18. Trigger spring        | 38. Slide stop                     |
| 19. Hammer spring housing | 39. Trigger pin                    |
| 20. Grip safety           | 40. Frame                          |

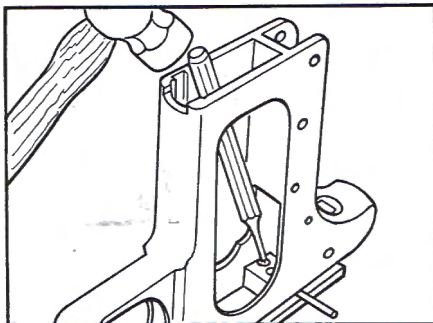




2 A single pin (3) retains firing pin in slide and acts as extractor hinge pin. Hold slide in padded vise as shown and drive pin out. Remove firing pin (7), firing pin spring (6), extractor (4) and extractor spring (5).



3 Only difficult piece to reassemble is hammer spring (16). A slave pin is employed to retain the hammer spring (16) and plunger (15). This slave pin is a short wire or nail that holds assemblies in place until proper pin is inserted. Correct pin (24) is driven through frame and knocks out slave pin.



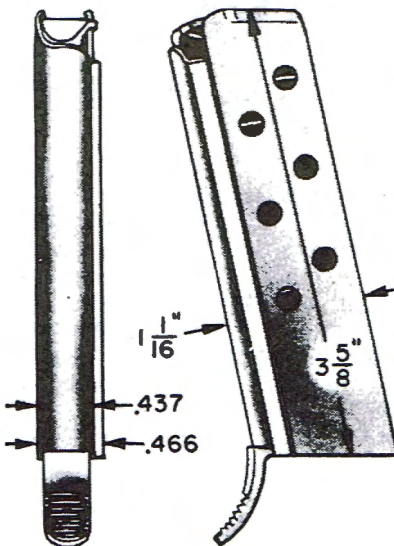
4 Disconnector (12) and ejector (11) are retained by cross pin (27) through frame. Remove pin and disconnector will drop out; however, ejector must be driven out as shown. When reinstalling cross pin, be sure it is in slightly below the surface to prevent retarding slide motion.

Hungarian P37  
Cal. .380 ACP

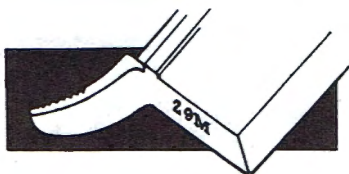


## PISTOL MAGAZINES

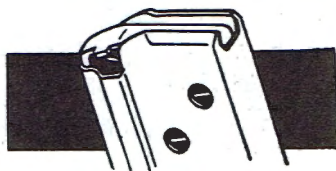
One of a series



The Femaru-Fegyver, better known as the Hungarian P37, is an extremely well-made little blowback automatic. It is compact, simple, and rugged, and is generally found in .380 ACP or .32 ACP cal. It features a grip safety and an excellent takedown system. The finger extension on the magazine is standard equipment and gives the gun a very comfortable grip.



Like the rest of the gun, the magazine is heavily made. The floorplate is machined from a solid piece, and is usually engraved as shown.



The most distinctive feature of the magazine is the heavy guide rib found on the left side. This guides a projection on the magazine follower, and also guides the magazine into the grip.—E. J. HOFFSCHMIDT

## Soviet Service Pistols

What handgun is now standard in the Soviet Service? I understand that the Tokarev 7.62 mm. automatic pistol has been replaced.

Answer: The standard Soviet Service handgun is currently the Makarov (PM) 9 mm. automatic pistol introduced after World War II. This blowback-operated arm is named after its designer. (PM) in the designation thus stands for Pistolet Makarov (Makarov Pistol).

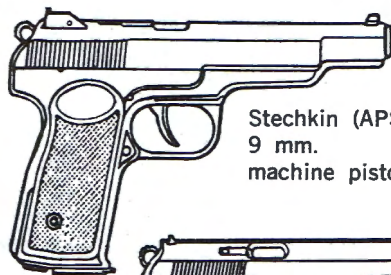
Generally similar in appearance and basic design to the German Walther Model PP pistol, the Makarov has a double-action lock mechanism with exposed hammer. A safety pivoted on the left of the slide is on safe when horizontal. This pistol, unlike the Walther PP, is equipped with a thumb-operated slide stop, its magazine release is on the bottom of the handle, and it has a flat hammer spring. The one-piece checkered plastic grip extends around the rear of the receiver. Barrel length is 3.83", and weight unloaded is 25 ozs. The magazine holds eight rounds.

Another Soviet Service handgun introduced after World War II is the Stechkin (APS) 9 mm. machine pistol, a blowback-operated arm. It was issued in limited numbers, but is now obsolete. However, it is presumed to be in use by border guard and security police units.

Considerably larger than the Makarov, the Stechkin has a five-inch barrel and a 20-round staggered-column detachable magazine. This selective-fire pistol has a change lever combined with the safety on the left of the slide. It is also furnished with a detachable shoulder stock that can be used as a holster. Weight unloaded with stock is 3.92 lbs.

With shoulder stock attached, the Stechkin is capable of very good accuracy up to about 150 yds. It is doubtful, however, if the full-automatic capability has any practical value beyond 25 yds.

Both the Makarov and Stechkin fire a 9 mm. straight-case rimless cartridge approximately midway between the .380 ACP and 9 mm. Luger in size and power. Muzzle velocity of the round-nose 94-gr. jacketed bullet is approximately 1070 feet per second (f.p.s.) fired from the Makarov, and about 1100 f.p.s. fired from the Stechkin.—L.O.



Stechkin (APS)  
9 mm.  
machine pistol.



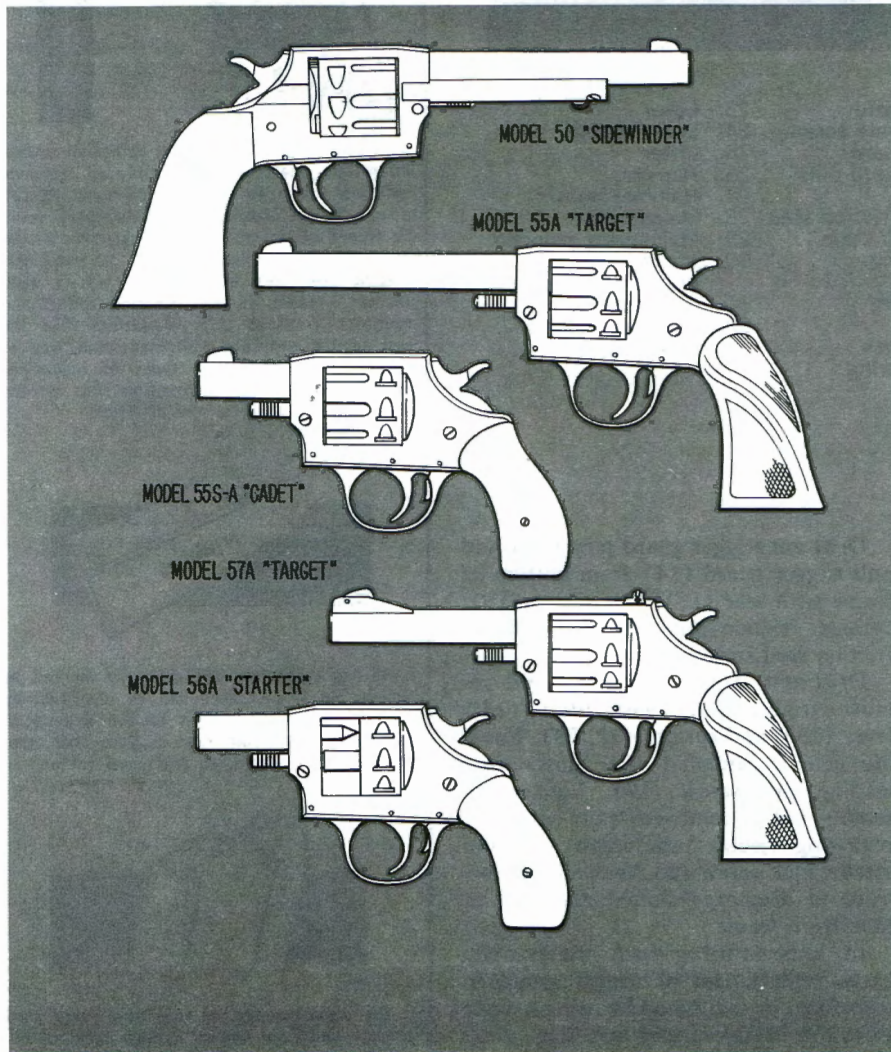
Makarov (PM)  
9 mm.  
automatic pistol.





# Iver Johnson Model 50 Revolver

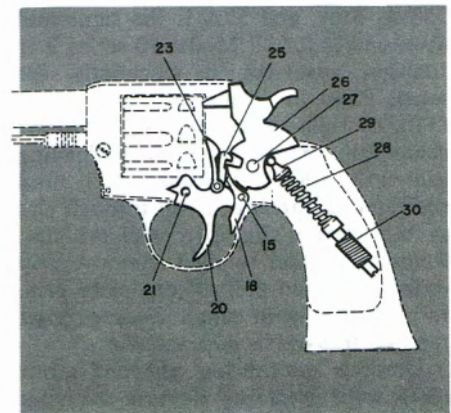
By JAMES M. TRIGGS



**1** All Iver Johnson revolvers in the Model 50 series are shown here for comparison. Basic mechanism of all versions is the same and main differences in parts are in barrels, calibers, cylinders, sight arrangements, and grip styles.

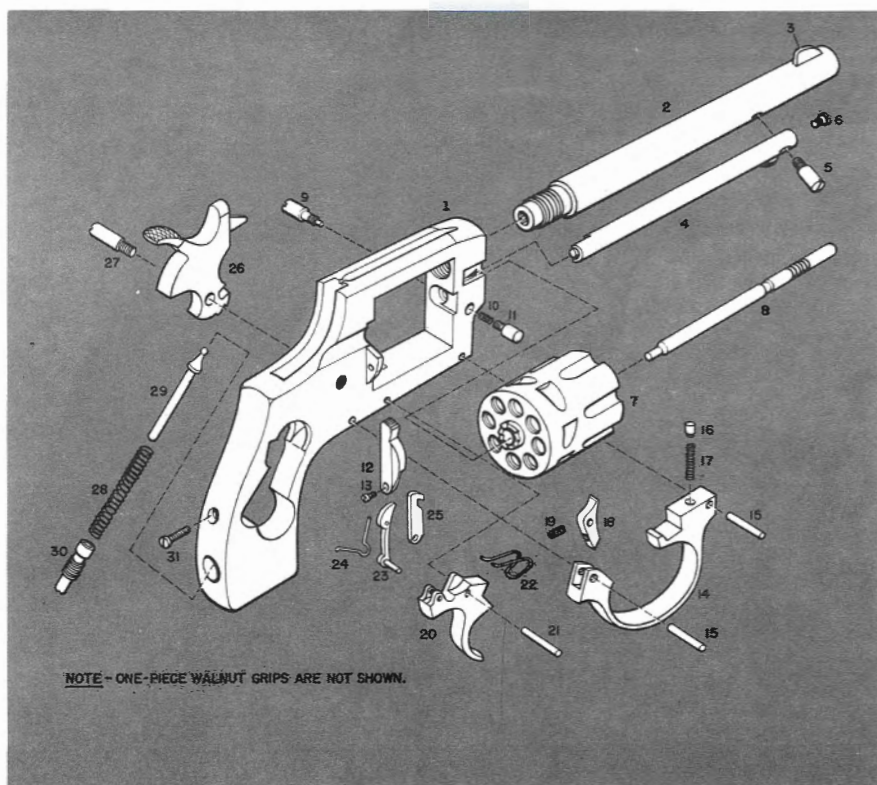
**I**NTRODUCED in 1961, the Iver Johnson Model 50 Sidewinder cal. .22 long rifle revolver was designed for informal target shooting.

A solid-frame double-action revolver, the Model 50 features rod ejection, a hinged loading gate, and a western-style walnut grip. Barrel length is 6". Sights are fixed. The 8-shot capacity cylinder has counter-bored chambers to enclose the cartridge heads. A flash shield on the front of the cylinder diverts powder gases forward and away from the shooter. The trigger mechanism includes a half-cock safety which permits cylinder rotation for loading and unloading. Deep checkering on the wide hammer spur facilitates cocking.



**2** Basic lock mechanism of the Model 50 Sidewinder and other Model 50 series Iver Johnson revolvers is shown in this phantom view. The small trigger spring (22), sear spring (19), and lever spring (24) are omitted for clarity.





NOTE - ONE-PIECE WALNUT GRIPS ARE NOT SHOWN.

#### Parts Legend

- |                             |                                   |                                 |
|-----------------------------|-----------------------------------|---------------------------------|
| 1. Frame                    | 12. Loading gate                  | 23. Lever                       |
| 2. Barrel                   | 13. Loading gate screw            | 24. Lever spring                |
| 3. Front sight blade        | 14. Trigger guard                 | 25. Lifter                      |
| 4. Ejector assembly         | 15. Trigger guard pins (2)        | 26. Hammer                      |
| 5. Ejector tube screw       | 16. Cylinder friction stud        | 27. Hammer screw                |
| 6. Ejector lock screw       | 17. Cylinder friction stud spring | 28. Mainspring                  |
| 7. Cylinder                 | 18. Sear                          | 29. Mainspring plunger          |
| 8. Center pin               | 19. Sear spring                   | 30. Mainspring adjusting screw  |
| 9. Center pin catch nut     | 20. Trigger                       | 31. Grip screw                  |
| 10. Center pin catch spring | 21. Trigger pin                   | 32. Grip, one-piece (not shown) |
| 11. Center pin catch screw  | 22. Trigger spring                |                                 |

#### Disassembly Procedure

Basic mechanism of Models 50, 55A, 55S-A, 56A, and 57A is the same and disassembly for all Model 50 series Iver Johnson revolvers is essentially the same. Press in center pin catch screw (11) at right of frame and withdraw center pin (8) to front. Open loading gate (12). Rotate cylinder (7) until rear end of barrel can slip through slot in flash control rim at front of cylinder. Remove cylinder to right. Remove grip screw (31) and pull off one-piece grip. In revolvers with small 2-piece grips, remove transverse grip screw.

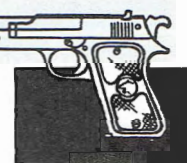
Unscrew mainspring adjusting screw (30) until it stops. Remove hammer screw (27). Hold trigger (20) back and remove hammer (26) through top of frame. Remove mainspring (28) and mainspring plunger (29) through top of frame. Remove mainspring adjusting screw through cutout in frame.

Drift out trigger guard pins (15) and pull trigger guard (14) from bottom of frame with sear (18), sear spring (19), cylinder friction stud (16) and cylinder friction stud spring (17).

Drift out trigger pin (21) and remove trigger (20) with lifter (25), lever (23), and springs (22, 24). Loading gate is removed after unscrewing loading gate screw (13). Ejector assembly (4) is removed from barrel by removing ejector tube screw (5) and ejector lock screw (6), then sliding forward to disengage slotted rear end of tube from frame.

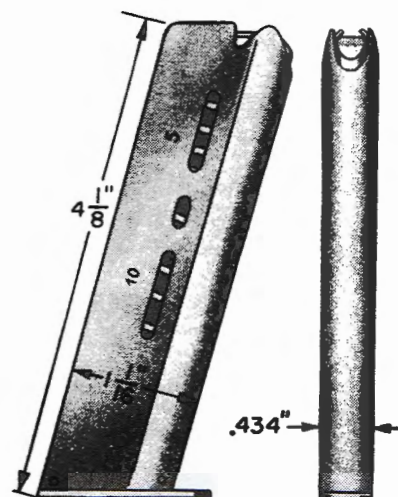
In reassembling lock mechanism parts, replacement of trigger guard in frame can be facilitated by using a short slave pin to secure sear and sear spring in place. When trigger guard pins are replaced through frame, slave pin will be pushed out.

Reising .22 Cal.  
Auto Pistol



## PISTOL MAGAZINES

One of a series



The Reising .22 cal. pistol embodied several interesting features, but could not compete with less expensive and more compact .22 cal. pistols. It was unusual in that the barrel could be tipped up to load like a single-shot pistol, or could be fired like a normal .22 automatic feeding from the magazine. It was a good shooter because of long sighting radius and comfortably-shaped grip. Magazines, like the rest of the gun, are well made and free of toolmarks. There are 2 types of magazines found; one has long observation slots on the side, and the other a row of holes.



Reising magazines are generally marked as shown, but if unmarked can be identified by their keyhole-shaped cross section instead of the usual rectangular cross section. Then, too, the floorplate is tapered from heel to toe.



The magazine lips are very carefully formed and are unusually strong. Another point of recognition is the rounded bolt clearance cut in the backstrap of the magazine.—E. J. HOFF-SCHMIDT



# Iver Johnson Model 66 Revolver

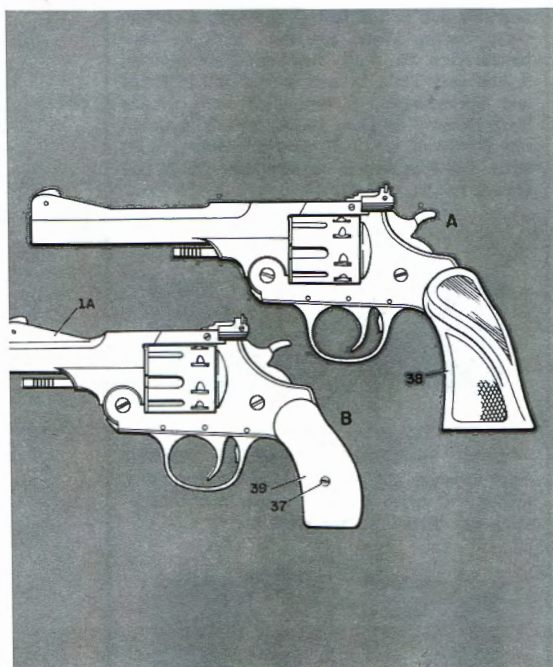
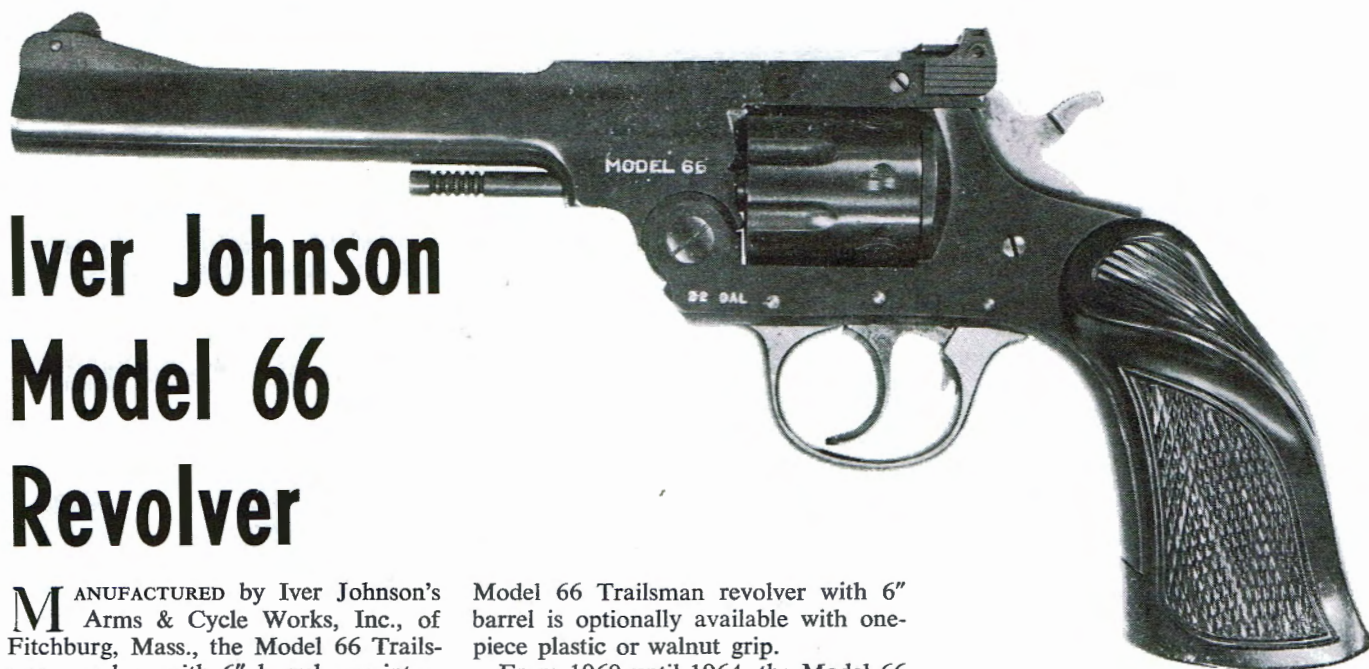
**M**ANUFACTURED by Iver Johnson's Arms & Cycle Works, Inc., of Fitchburg, Mass., the Model 66 Trailsman revolver with 6" barrel was introduced in 1958. Chambered for the .22 long rifle cartridge, this 8-shot, top-break, double-action revolver features a rebounding hammer and adjustable target sights. Chambers are counterbored to enclose the cartridge heads, and front face of the cylinder has a flash shield to direct powder gases forward and away from the shooter. Cartridges or fired cases are ejected manually by depressing the ejector rod under the barrel. The

Model 66 Trailsman revolver with 6" barrel is optionally available with one-piece plastic or walnut grip.

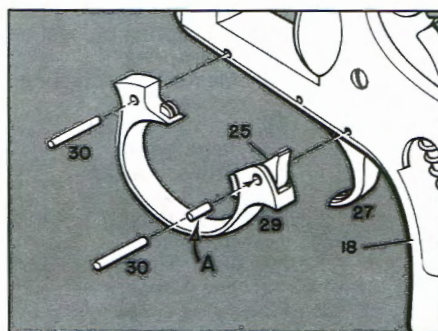
From 1960 until 1964, the Model 66 revolver was offered with 2¾" barrel under the designation Trailsman-Snub (Snub Model 66S). In addition to cal. .22 long rifle, the Snub Model 66S Trailsman revolver was chambered for the .32 S&W and .38 S&W center-fire cartridges. (cylinder capacity 5 rounds)

In 1962, the Model 66 Trailsman cal. .22 long rifle revolver was offered with 4½" barrel. This version was discontinued in 1964.

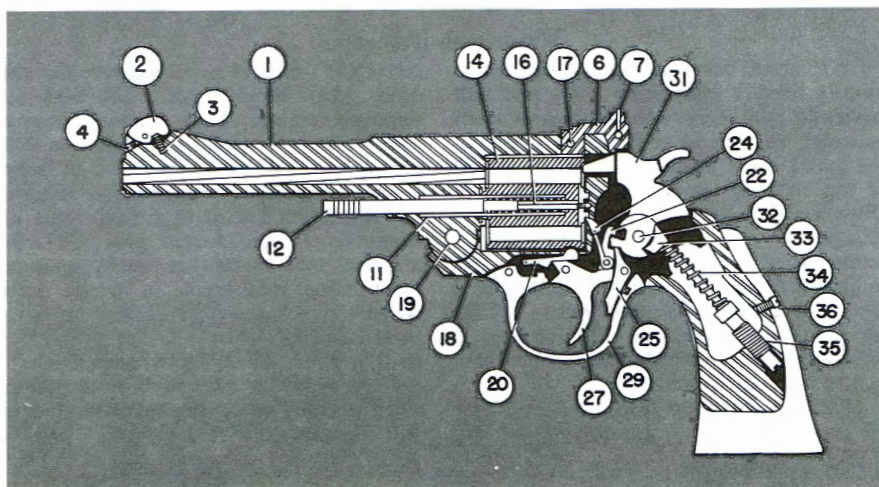
By JAMES M. TRIGGS



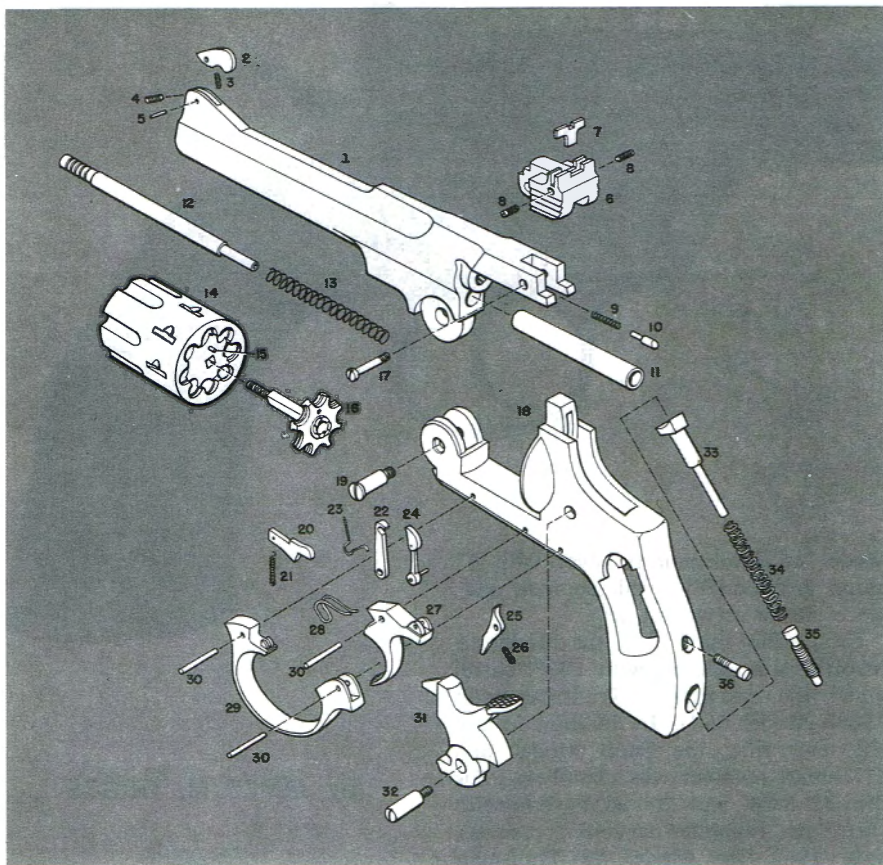
**1** Note that the 2¾" barrel Snub Model 66S (B) is provided with the smaller two-piece grips (39) and single transverse grip screw (37). The standard model (A) with 6" barrel has one-piece grip with thumb rest (38). Grip is secured by a single screw (36).



**2** In reassembling lock mechanism, replacing trigger guard (29) in frame is facilitated by using a small slave-pin (as shown at 'A') to secure sear and sear spring (25, 26) in rear of trigger guard. Make the slave-pin of brass rod or wood, slightly shorter than width of trigger guard. With slave-pin in place, trigger guard can be replaced in frame (18) with sear and spring and trigger guard pins (30) replaced. As rear trigger guard pin is drifted into frame, it will push slave-pin out.







#### Parts Legend

- |                                    |                                |                                  |
|------------------------------------|--------------------------------|----------------------------------|
| 1. Barrel, 6"                      | 15. Extractor pin              | 31. Hammer                       |
| 1A. Barrel, 2 3/4"                 | 16. Extractor                  | 32. Hammer screw                 |
| 2. Front sight blade               | 17. Barrel catch screw         | 33. Mainspring plunger           |
| 3. Front sight spring              | 18. Frame                      | 34. Mainspring                   |
| 4. Front sight adjusting screw     | 19. Joint screw                | 35. Mainspring adjusting screw   |
| 5. Front sight pin                 | 20. Cylinder stop              | 36. Grip screw (for large grips) |
| 6. Barrel catch                    | 21. Cylinder stop spring       | 37. Grip screw (for small grips) |
| 7. Rear sight blade                | 22. Lifter                     | 38. Grips (large, one-piece)     |
| 8. Rear sight adjusting screws (2) | 23. Lever spring               | 39. Grips (small, two-piece)     |
| 9. Barrel catch spring             | 24. Lever and pin              | 40. Tang plug screw (not shown)  |
| 10. Barrel catch plunger           | 25. Sear                       |                                  |
| 11. Quill                          | 26. Sear spring                |                                  |
| 12. Ejector rod                    | 27. Trigger                    |                                  |
| 13. Extractor spring               | 28. Trigger spring             |                                  |
| 14. Cylinder                       | 29. Trigger guard              |                                  |
|                                    | 30. Trigger and guard pins (3) |                                  |

#### Disassembly Procedure

To separate barrel assembly from frame (1, 18) remove joint screw (19) and pull barrel off joint. Rear sight and barrel catch assembly (6) can be removed by unscrewing barrel catch screw (17) from left side of top strap of barrel, taking care not to allow ejection of barrel catch spring and plunger (9, 10). Cylinder (14) can be removed by holding up barrel catch and pulling cylinder to rear off quill (11). Complete disassembly of cylinder, extractor (16), and ejector rod (12) assembly is unnecessary for normal cleaning purposes and is not recommended.

Remove grip screw (36) and pull grip off frame. Unscrew mainspring adjusting

screw (35) until it stops. Remove hammer screw (32). Hold trigger (27) back and remove hammer (31) through top of frame. Remove mainspring plunger (33) and mainspring (34) through top of frame. Unscrew and remove mainspring adjusting screw through cutout in frame. Drift out trigger guard and trigger pins (30). Remaining lock parts are easily removed from frame. Reassemble in reverse order. Be sure that barrel catch is held up in unlocked position when replacing cylinder on quill to avoid damaging cylinder finish.

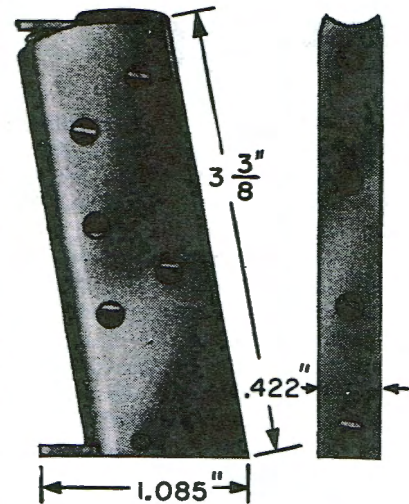
**Note:** Hammer must be in fired position when opening or closing revolver or lever will be damaged. ■

Davis-Warner  
"Infallible"  
.32 Cal. Auto.

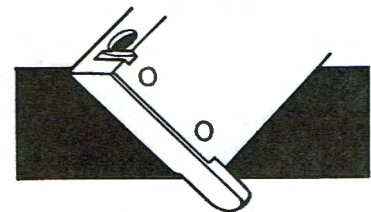


## PISTOL MAGAZINES

One of a series



Though the Davis-Warner "Infallible" was made in 2 distinct variations, it is a comparatively scarce American pocket pistol. This is probably due to the fact that it was a clumsy, bulky design. When compared with its contemporaries, the Colt, Remington, or Mauser, it had very little to recommend it. In shape and workmanship, it resembled some of the lesser known Belgian pocket pistols such as the Melior or the Feil. It is generally found either blued or with a mottled-color finish, and always in .32 cal. ACP.



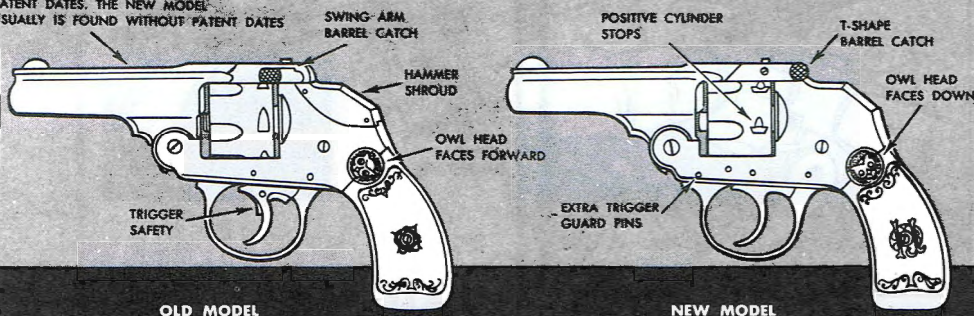
While Davis-Warner magazines resemble most common .32 pistol magazines in outline, the row of holes and the notch in the backstrap are distinctive features.



Another distinctive feature is the overlay construction used to make the magazine. This construction leaves an edge of sheet metal showing along the backstrap.—E. J. HOFF-SCHMIDT



OLD MODEL LEGEND INCLUDES  
PATENT DATES. THE NEW MODEL  
USUALLY IS FOUND WITHOUT PATENT DATES



frame pins. Internally, the new model features a separate cylinder latch that allows a more positive stop. The flat hammer spring was changed to an adjustable coil spring. The simplified extractor cam was made more reliable by replacing the fragile flat spring with a coil spring.

The greatest source of trouble on the old model was the lack of a positive cylinder stop which resulted in lead being shaved from the bullet as it passed from the cylinder chamber to the barrel mouth. This difficulty was overcome in the new model.

# Iver Johnson Top-Break Revolver

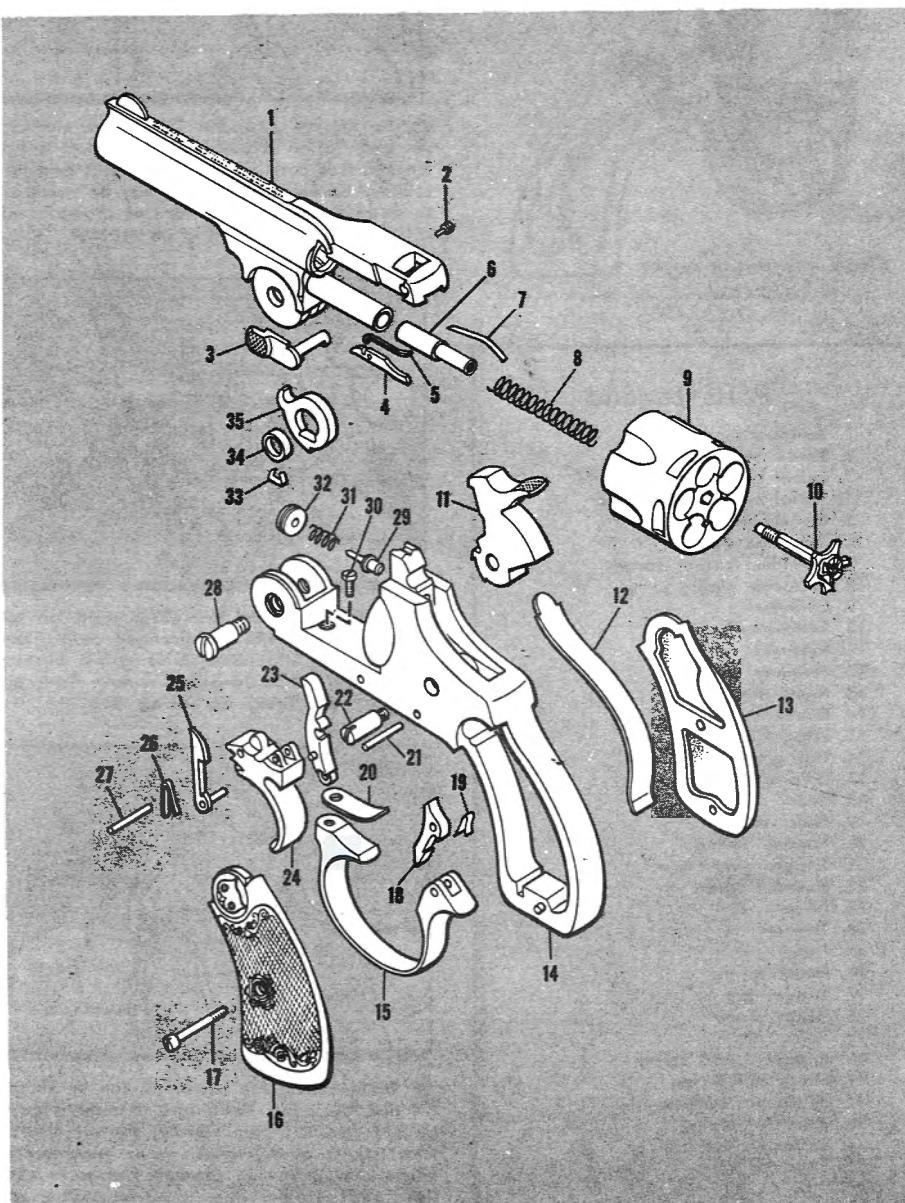
By E. J. Hoffschmidt

AROUND the turn of the century top-break revolvers were as common as coffee grinders in the average American home. For \$2 a person could buy an Iver Johnson solid-frame Model 1900 in cal. .22, .32, or .38 S&W. For a few dollars more he could buy a more efficient top-break model, available in single- and double-action, with hammer or hammerless double-action. Choice of barrel lengths ranged from 2" to 6". For another dollar the top-break could be had with a much larger one-piece 'Western'-style walnut grip. Iver Johnson eventually put out the less-expensive line of "U. S." top-break hammer and hammerless revolvers.

For years Iver Johnson advertisements pictured the hammering of a top-break hammer to prove its safety. While this sort of safety test is not particularly good for the gun, it was a selling point.

The safety hammer mechanism is a very clever design. When the hammer is down, it does not touch the firing pin. It rests against the frame and is cut away around the firing pin area. When the trigger is pulled or the hammer cocked, the lifter is brought up behind the firing pin. When the trigger actuates the sear, the hammer is released and strikes the lifter, which transmits the blow to the firing pin.

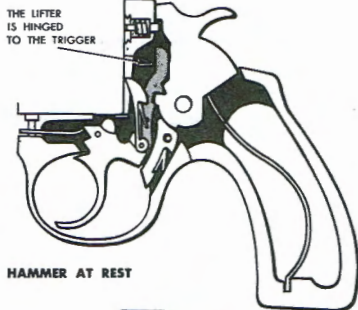
There is quite a difference in design between the old and new models. While both feature the safety hammer, most internal parts are not interchangeable. The gun illustrated in the exploded view is the old model. The new model can be easily recognized by the simple round barrel catch and the 2 additional



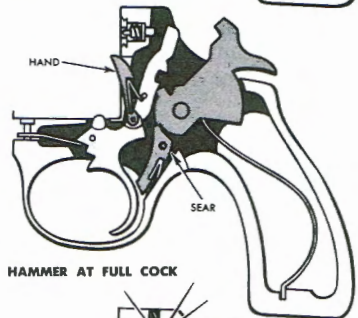
E. J. HOFFSCHMIDT is an artist-illustrator with years of experience with firearms.



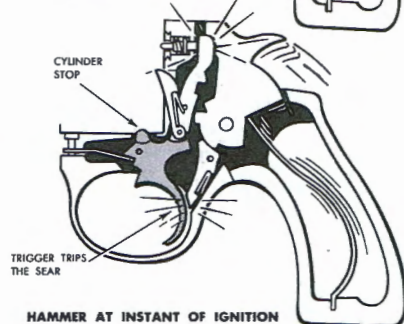
THE LIFTER  
IS HINGED  
TO THE TRIGGER



HAMMER AT REST



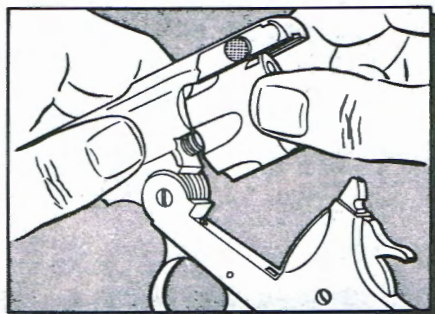
HAMMER AT FULL COCK



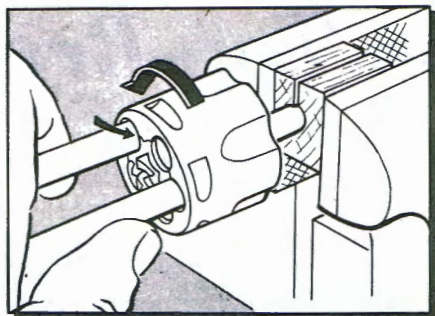
HAMMER AT INSTANT OF IGNITION

## Parts Legend

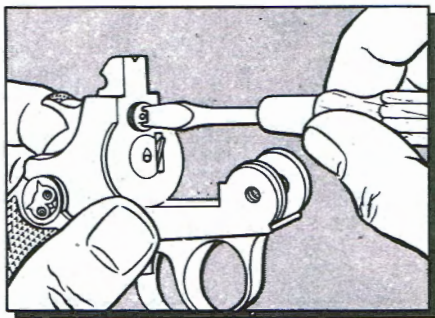
1. Barrel assembly
2. Barrel catch screw
3. Barrel catch
4. Barrel catch spring cover
5. Barrel catch spring
6. Extractor stem
7. Cylinder friction spring
8. Extractor spring
9. Cylinder
10. Extractor
11. Hammer
12. Hammer spring
13. Right grip
14. Frame
15. Trigger guard
16. Left grip
17. Grip screw
18. Sear
19. Sear spring
20. Trigger spring
21. Trigger guard pin
22. Hammer screw
23. Lifter
24. Trigger
25. Hand
26. Hand spring
27. Trigger pin
28. Hinge screw
29. Firing pin
30. Trigger guard screw
31. Firing pin spring
32. Firing pin bushing
33. Extractor spring
34. Extractor bushing
35. Extractor cam



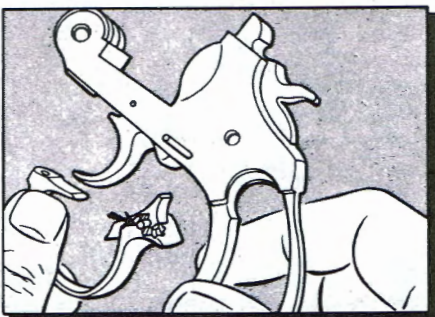
**1** To remove cylinder (9) of old model, open gun far enough for extractor to snap back into cylinder. Pull back on cylinder and revolve it counterclockwise to free it from the barrel



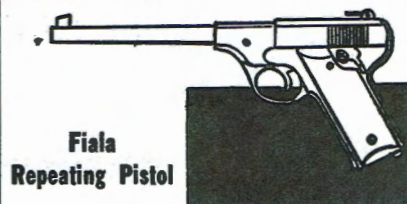
**2** To remove extractor (10), hold extractor stem (6) in a padded vise. Insert a few empty cases part way into chambers and turn cylinder counterclockwise. It may be necessary to insert a pair of brass rods as shown to afford a better grip on cylinder



**3** To remove firing pin (29), grind an old screwdriver into a 2-pronged tool. Stone prongs to fit into holes in firing pin bushing (32). Screw out bushing and remove firing pin and firing pin spring (31)



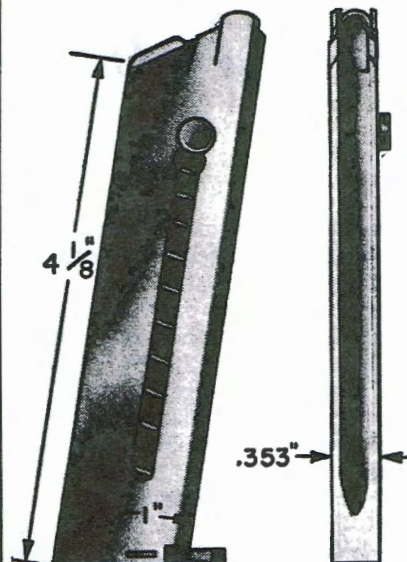
**4** Reassembling the top-break can be simplified by using slave pin. Assemble parts outside gun with pin (arrow) slightly shorter than trigger guard width. Insert assembly in frame and drive pin through frame, to drift slave pin out other side



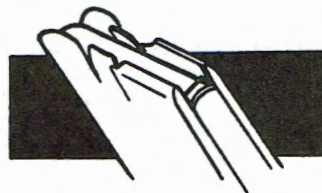
Fiala  
Repeating Pistol

## PISTOL MAGAZINES

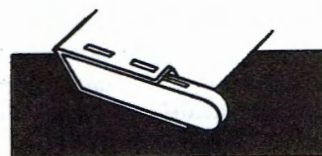
One of a series



Maj. Anthony Fiala's weapon looks like a semi-automatic pistol, but in reality it is a repeater. After each shot the slide has to be actuated by hand. The barrel is removable. The gun was sold with short barrel for a pocket arm, a medium-length barrel for target shooting, and a long barrel for use with shoulder stock which could be screwed to the grip to make a rifle. The gun was never very popular, and therefore is not common.



While Fiala magazines look a great deal like early Hartford or Hi-Standard pistol magazines, they have a distinctive rounded backstrap which makes them easy to spot.



Another point of identity is the odd stab marks used to retain the floorplate.—E. J. HOFFSCHMIDT



# JAPANESE TYPE 26 REVOLVER

By E. J. HOFFSCHMIDT

**D**URING the 26th year of Emperor Meiji's reign (Christian year 1893), the Japanese Army adopted the Type 26 9 mm. revolver. Designed and produced in Japan, this weapon was the standard Japanese Army handgun until replaced about 1914 by the Nambu automatic pistol. It remained in service as substitute standard after the Nambu was adopted, and was used to some extent during World War II.

The top-break system of the Type 26 is similar to that of several older Smith & Wesson revolvers. To open for loading and unloading, the latch at the top rear of the barrel is lifted, and the barrel is pivoted down. As the barrel pivots down, all 6 cartridges are extracted and ejected automatically and simultaneously.

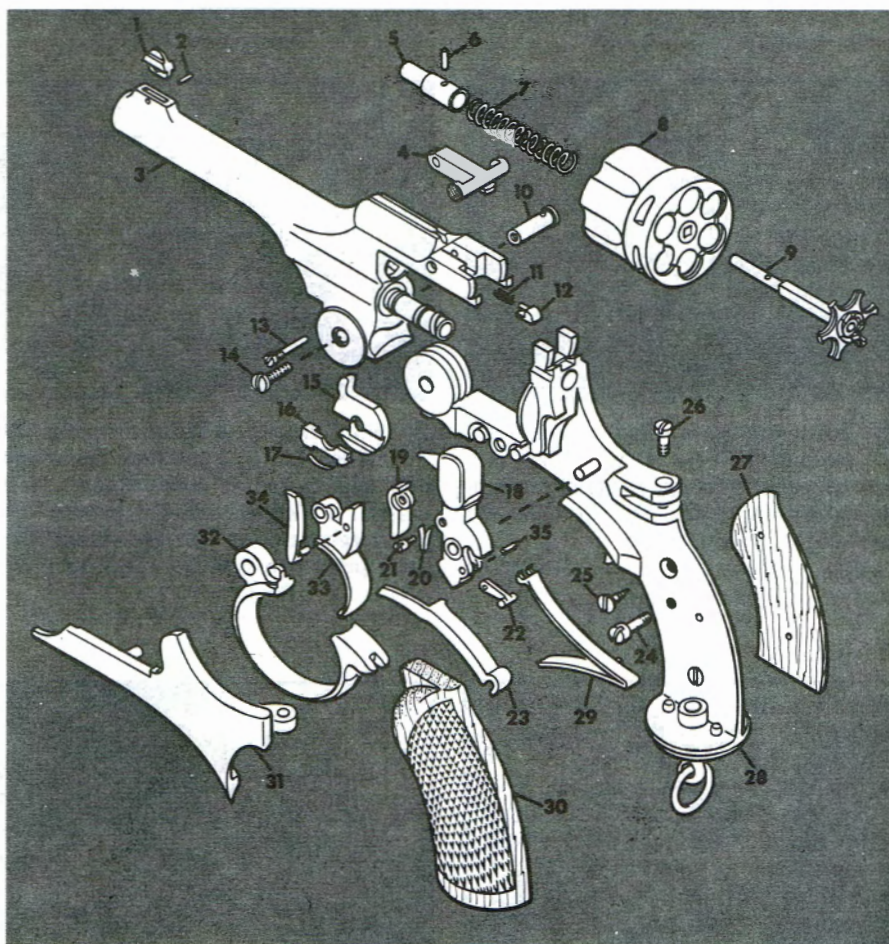
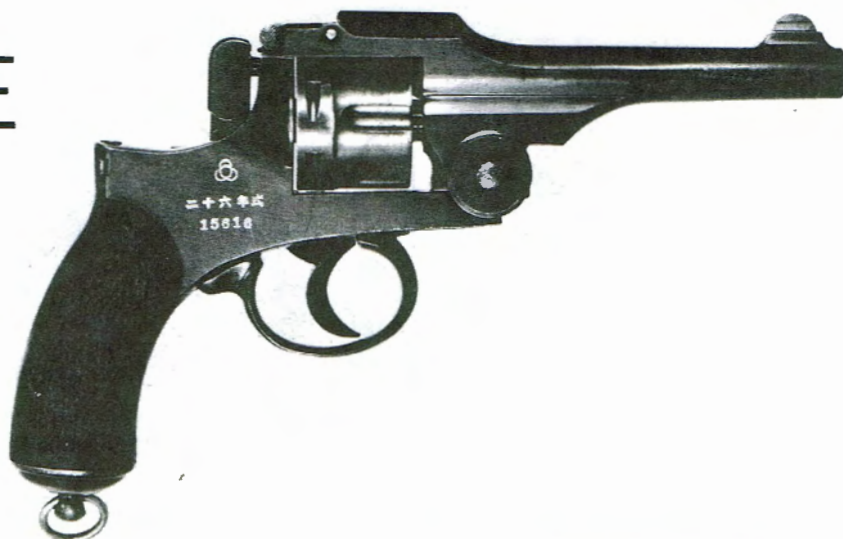
In lockwork design, the Type 26 closely resembles the Austro-Hungarian Rast & Gasser Model 98 revolver. An excellent feature is that the sideplate can be pivoted open easily to expose the mechanism, and the lock parts can be removed for cleaning and lubrication without use of tools.

Firing requires a long pull of the trigger. The hammer has no full-cock notch and thus lacks a spur for thumb-cocking. This system, satisfactory for military purposes, is also used in the British No. 2 Mark I\* Enfield service revolver. It is, however, not suitable for precision target shooting, even though the trigger action of the Type 26 is extremely smooth.

Simple and well made, this revolver has checkered wood grips and a lanyard swivel. It is marked on the right of the frame with the serial number, symbol of the manufacturing arsenal, and Japanese numerals and letters which stand for 26 Year Type.

The Type 26 was brought to the U.S. by returning servicemen in considerable numbers and is encountered frequently. The 9 mm. cartridge for it, however, is rare. Of straight-case rimmed type, it has a round-nose, lead bullet, propelled by smokeless powder. Other identifying features are the lack of a headstamp and the unusually thin rim.

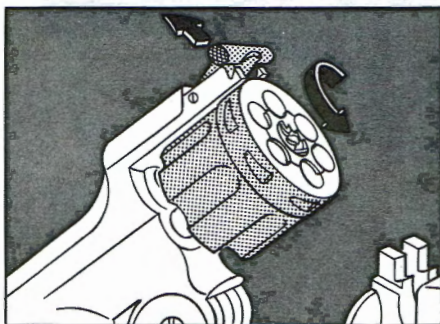
The takedown of the revolver is illustrated; the assembly is in reverse order.



## PARTS LEGEND

- |                          |                            |                           |                        |
|--------------------------|----------------------------|---------------------------|------------------------|
| 1. Front sight           | 10. Barrel hinge pin       | 18. Hammer                | 27. Right grip         |
| 2. Front sight pin       | 11. Latch spring           | 19. Strut                 | 28. Frame              |
| 3. Barrel                | 12. Latch spring plunger   | 20. Strut spring          | 29. Mainspring         |
| 4. Latch                 | 13. Latch screw            | 21. Strut screw           | 30. Left grip          |
| 5. Extractor bearing     | 14. Hinge pin screw        | 22. Hammer stirrup        | 31. Sideplate          |
| 6. Extractor bearing pin | 15. Extractor cam          | 23. Rebound lever         | 32. Trigger guard      |
| 7. Extractor spring      | 16. Extractor release      | 24. Rebound lever screw   | 33. Trigger            |
| 8. Cylinder              | 17. Release tension spring | 25. Right grip screw (2)  | 34. Hand               |
| 9. Extractor             |                            | 26. Sideplate hinge screw | 35. Hammer stirrup pin |

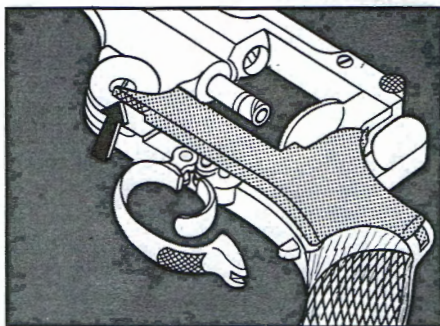




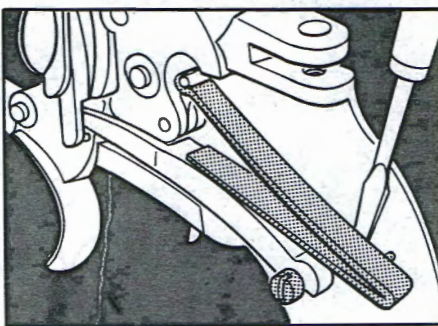
**1** To disassemble, first lift the latch (4), pivot the barrel (3) down, and remove any cartridges from the cylinder (8). Then, while holding latch up, unscrew the cylinder counterclockwise.



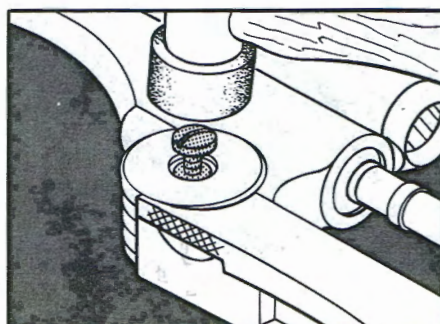
**2** Push forward slightly on the rear of the trigger guard (32) to unlatch it, and then pivot the trigger guard down. This unlocks the sideplate so it may be opened.



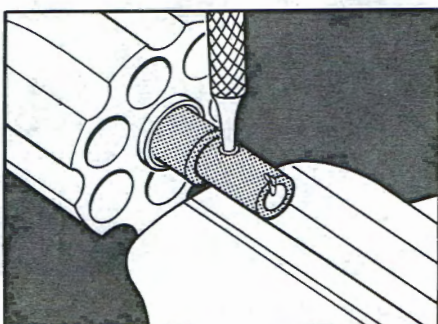
**3** Grasp the lower front of the sideplate (31) where it is knurled, and pivot it rearward to expose the lock mechanism. Lift off the left grip (30) and remove the trigger guard.



**4** Hold the rear of the mainspring (29) firmly, lift it away from the frame (28) slightly or pry outward gently with a small screwdriver, ease it upward, and disengage from the hammer stirrup (22). Lock parts can now be easily removed.

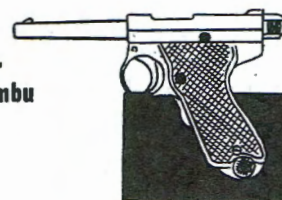


**5** Unscrew the hinge pin screw (14) about  $\frac{1}{8}$ ", and tap it lightly with a mallet to partially drive out the barrel hinge pin (10). Then completely remove the screw and hinge pin, separate the barrel from the frame, and take out the extractor cam (15), extractor release (16), and release tension spring (17).



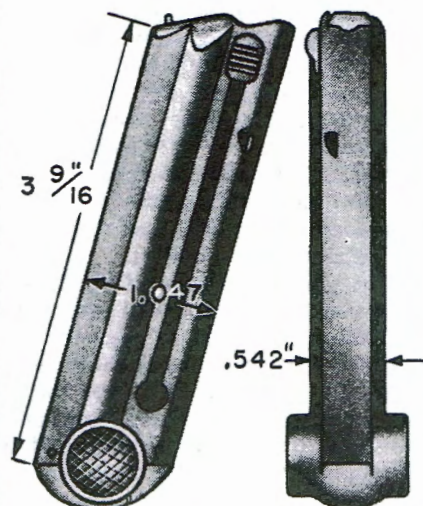
**6** Locate the extractor bearing pin (6). Rest the bearing on vise jaws and drive out the pin with a drift punch and hammer. Then remove the bearing, extractor spring (7), and extractor (9) from the cylinder. The latch, latch spring (11), and latch spring plunger (12) can be removed from the barrel after turning out the latch screw (13). ■

**7 mm.  
Baby Nambu**



## PISTOL MAGAZINES

One of a series



Baby Nambu pistols are scarce, but spare magazines and ammunition are even scarcer. This little weapon is almost a dead ringer for the larger Model 1914 Japanese Nambu pistol. It is extremely well made and fires a 7 mm. cartridge that is also a scaled-down version of the 8 mm. Jap pistol round. Except for size, the magazines are made exactly like the larger Model 1914 pistol.



Baby Nambu magazines can be recognized by the heavy aluminum floorplate that also acts as a finger grip to remove the magazine. As in its big brother, the finger grips are diamond checkered and pinned to the magazine body.



The Baby Nambu magazine is sturdy with heavy feed lips, and incorporates a button on the follower for easy loading. The follower is machined from solid material.—E. J. HOFF-SCHMIDT



# JAPANESE TYPE 94 PISTOL

By E. J. HOFFSCHMIDT

DESIGNED by Kijiro Nambu, the Type 94 (1934) Japanese Service pistol was chambered for the rimless 8 mm. Nambu Japanese service cartridge. This bottleneck cartridge was also used in Japanese Type 14 (1925) semi-automatic Service pistols and in Japanese submachine guns. A Nambu-designed semi-automatic pistol introduced about 1904 was also adapted for this round.

The recoil-operated Type 94 pistol has a device to lock barrel and slide together until the bullet has cleared the barrel and gas pressure has subsided. The detachable magazine housed in the grip holds 6 cartridges.

Safety devices on this arm are (1) a manual safety which locks the external sear and trigger bar and (2) a safety activated by the magazine catch mechanism. When the magazine catch button on the left side of the frame is depressed and the magazine is withdrawn from the grip, a bar rises to engage a detent notch in the rear of the trigger and thus block rearward movement of the trigger.

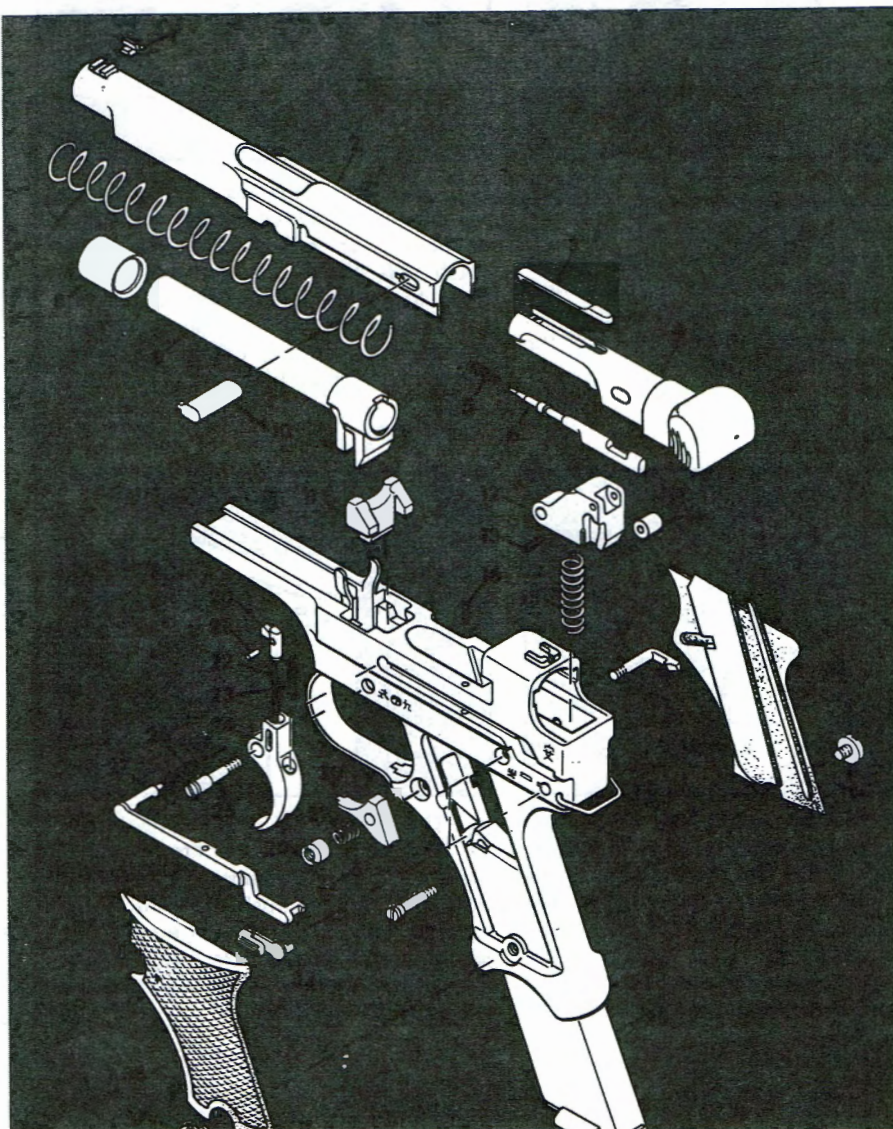
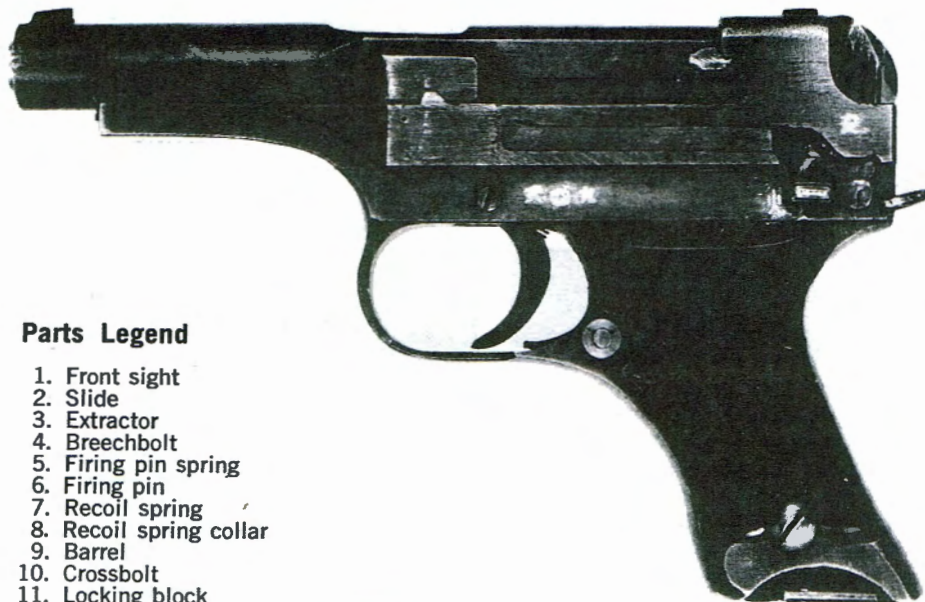
Other mechanical features of note in the Type 94 pistol include an independent spring-loaded firing pin, an internal, concealed hammer, and a lanyard ring attached to the rear of the frame. Grip plates are commonly of coarsely checkered black plastic, but smooth wood grips are also found on this arm.

A unique and potentially dangerous feature of the Type 94 pistol is that it can be fired by depressing the front end of the external sear and trigger bar which lies exposed in a slot milled in the left side of the frame. Also, the safety mechanism is not reliable.

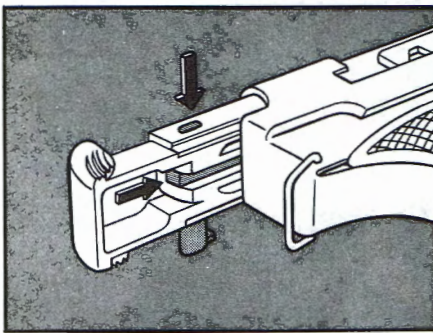
The average Type 94 pistol is roughly machined and finished, showing hasty wartime manufacture.

## Parts Legend

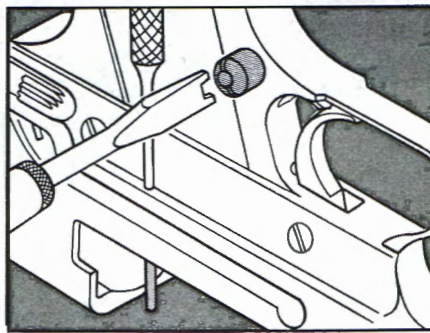
1. Front sight
2. Slide
3. Extractor
4. Breechbolt
5. Firing pin spring
6. Firing pin
7. Recoil spring
8. Recoil spring collar
9. Barrel
10. Crossbolt
11. Locking block
12. Hammer
13. Hammer roller pin
14. Hammer roller
15. Hammer spring
16. Sear hinge pin
17. Magazine catch
18. Right grip
19. Grip screw
20. Disconnecter
21. Disconnecter pin
22. Disconnecter spring
23. Trigger spring
24. Trigger
25. Trigger screw
26. Sear spring
27. Sear and trigger bar
28. Magazine catch nut
29. Magazine catch spring
30. Magazine operated safety
31. Magazine safety spring
32. Hammer screw
33. Safety catch
34. Frame
35. Magazine
36. Left grip
37. Grip screw





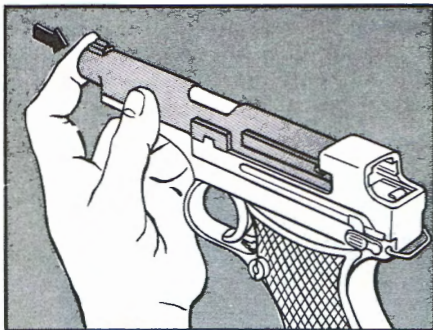


**1** The first step in disassembling the Type 94 pistol is to pull the slide to the rear over an empty magazine. The slide (2) and the breechbolt (4) will be held to the rear. Push the firing pin (6) forward until it is flush with the shoulder in the slide; this will free the crossbolt (10). The crossbolt can then be pushed out of the slide from right to left as shown.

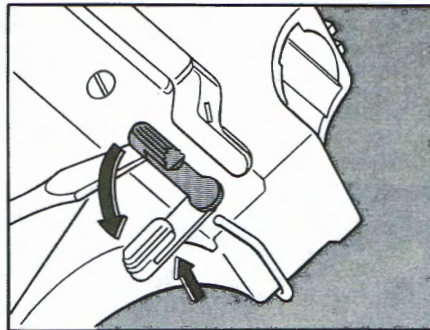


**4** The magazine catch nut (28) is sometimes peened or riveted to the shaft of the magazine catch (17). It can be unscrewed with a screwdriver ground to the shape shown or, if difficulty is encountered, with the aid of pliers or a vise.

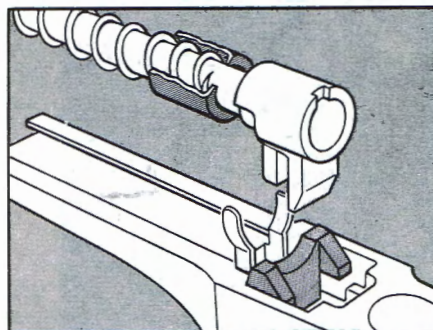
After removing left grip screw (37) and left grip (36), drift out sear hinge pin (16) from bottom. Remove trigger screw (25) and disengage trigger (24).



**2** After the breechbolt has been removed, the slide may stay in place. To remove the breechbolt first take out the magazine (35). Then, holding the gun as shown, push the barrel (9) back while holding the slide. This action unlocks the slide and permits it to be eased off the front of the frame (34).



**5** The safety catch has a detent on the inner face which retains the catch in the "on" or "off" position. The safety catch (33) blocks only the sear. To remove the safety catch, remove the left grip (36), lift the catch out of engagement with frame, and swing it down. The safety catch can then be lifted out.

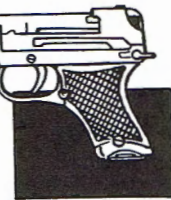


**3** When reassembling the gun, place the locking block (11) in the frame correctly so that the yoke on the barrel can fit over the curved surface of it. The barrel must be installed in the frame before putting the slide back on. The recoil spring collar (8) must be installed with the solid face toward the chamber.



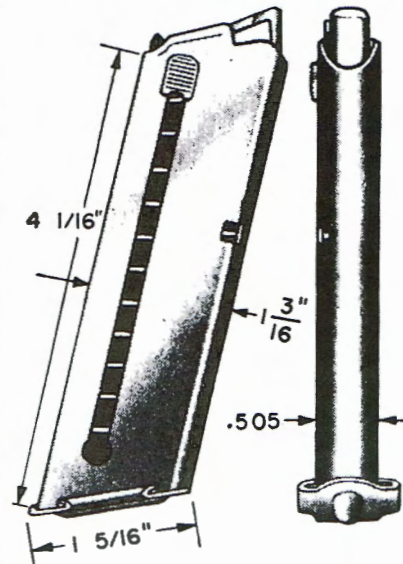
**6** The extractor (3) is of simple design. The tail is dove-tailed into the top of the breechbolt. To remove the extractor, with a screwdriver push the front of the extractor outward far enough for the projection on the extractor to clear its seat in the bolt. When it is free, pry the extractor out as shown.

Nambu Pattern 94  
8mm. Automatic

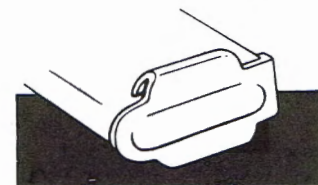


## PISTOL MAGAZINES

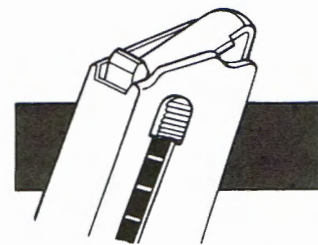
One of a series



Some call it Pattern 94, others call it the Jap "Suicide" pistol. Regardless of what you call it, it is best as a decoration. These pistols are generally poorly made and poorly finished. The name Suicide pistol stems from the faulty design of the sear mechanism. The sear is exposed on the left side of the gun, making it possible to fire the gun without pulling the trigger. Contrary to the rest of the gun, the magazine is well designed and made of heavy gauge steel. The magazines were chrome-plated or blued.



Nambu 94 magazines can generally be recognized by the loading button and groove on the right side, and by the absence of observation holes on the left side, but most of all by the oddly-shaped floorplate that facilitates its removal from the gun.



Since the follower is machined from a bar of solid steel, it is heavy enough to deform the magazine lips if the loading button did not stop it well below the lips.—  
E. J. HOFFSCHMIDT



# LAHTI

## M40 PISTOL

By E. J. Hoffschmidt



**G**UN designer Aimo Johannes Lahti of Finland developed a wide range of firearms for his native land—from automatic pistols to aircraft cannons. Today he is best known for an automatic pistol adopted as the L35 by Finland and, in slightly modified form, as the M40 by Sweden.

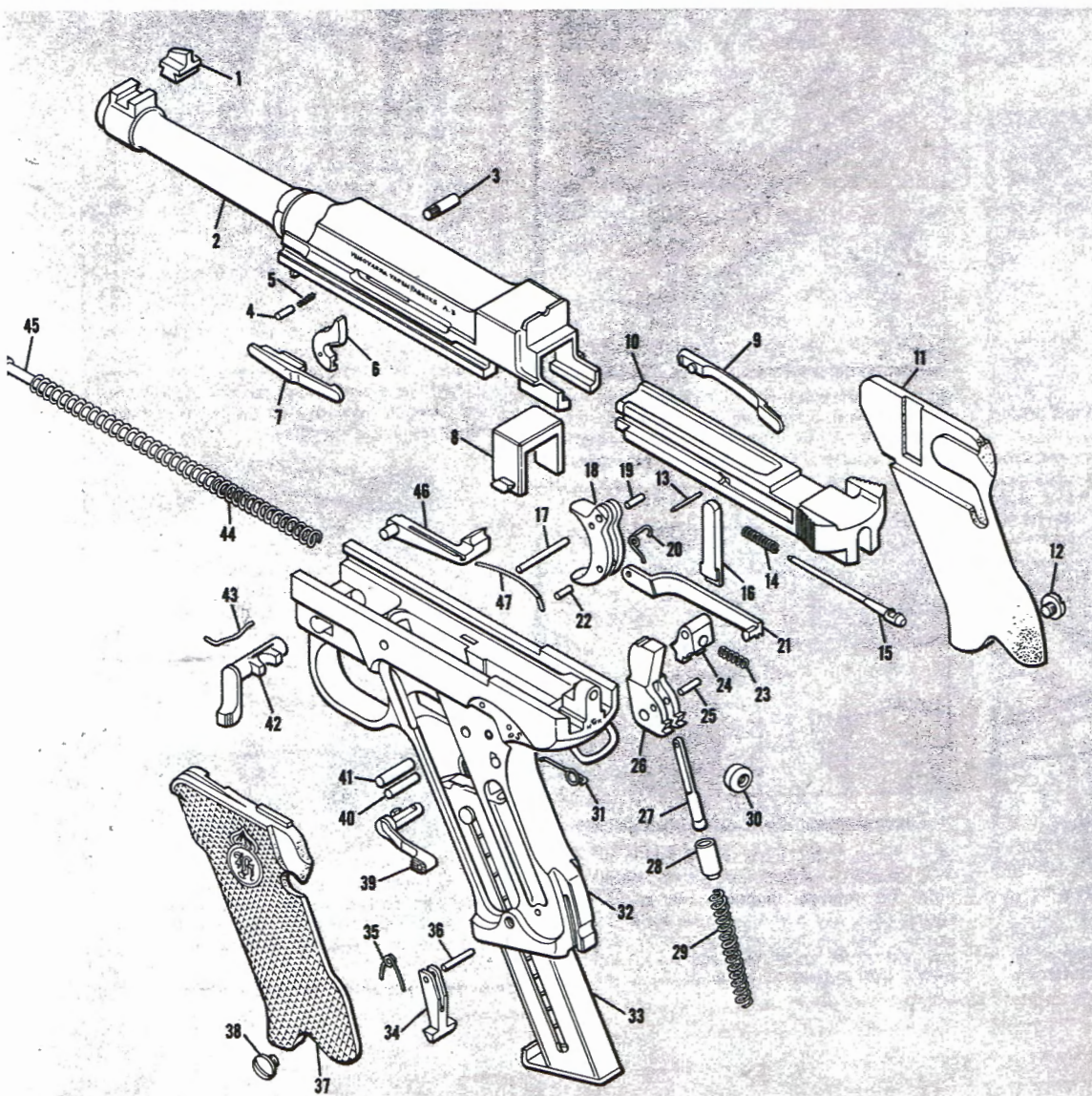
While the Finnish L35 Lahti is virtually unknown here, the Swedish M40 version is far more common. A number of these guns, marked Husqvarna Vapenfabriks A. B., were imported and sold in the U. S. around 1949 and 1950.

The Lahti is a heavy, rugged gun and mirrors the conditions it was de-

signed for. The operating parts are strong and well designed for the extreme cold encountered along the Finnish and Swedish frontiers. The serrations on the slide are deep and tapered so that the slide can be retracted easily with a heavily gloved hand. The large trigger guard and protruding safety

### Parts Legend

1. Front sight
2. Barrel and barrel extension
3. Accelerator stop pin
4. Accelerator retainer
5. Accelerator retainer spring
6. Accelerator
7. Ejector
8. Locking block
9. Extractor
10. Slide
11. Right grip
12. Grip screw
13. Firing pin retainer pin
14. Firing pin spring
15. Firing pin
16. Disconnecter
17. Trigger pin
18. Trigger
19. Trigger spring pin
20. Trigger spring
21. Trigger bar
22. Trigger bar pin
23. Sear spring
24. Sear
25. Hammer strut pin
26. Hammer
27. Hammer strut
28. Hammer spring plunger
29. Hammer spring
30. Spring guide nut
31. Trigger bar spring
32. Frame
33. Magazine
34. Magazine catch
35. Magazine catch spring
36. Magazine catch pin
37. Left grip
38. Grip screw
39. Safety catch
40. Sear pin
41. Hammer pin
42. Takedown catch
43. Takedown catch spring
44. Recoil spring
45. Recoil spring guide
46. Hold-open catch
47. Hold-open catch spring





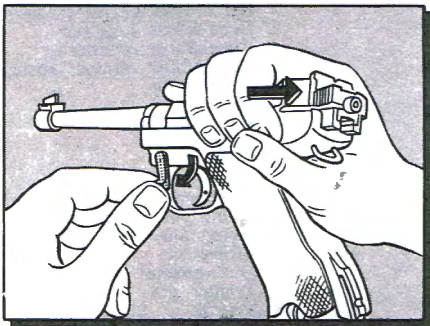
catch were also designed for gloved-hand operation. The cold weather also influenced mechanism design.

Even though the gun shoots the powerful 9 mm. Luger cartridge, Lahti added an accelerator to aid the operating mechanism. The accelerator in L35 and M40 pistols is a lever pivoted to the barrel extension. As the barrel, barrel extension, and slide recoil to the rear, the locking block is cammed free of the slide. At this instant the lower portion of the accelerator strikes the receiver wall and this blow is transmitted to the unlocked slide, throwing it back with great force. When the slide counter-recoils, it pushes the accelerator back in place.

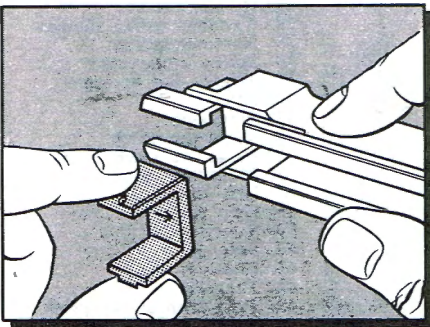
An excellent grip and a long, fixed sighting radius make the gun a fine shooter. When equipped with its Luger-type shoulder stock, it becomes a formidable carbine.

An unfavorable feature of this pistol is that it will fire with its locking block removed. A check should therefore be made before firing to make sure locking block is present.

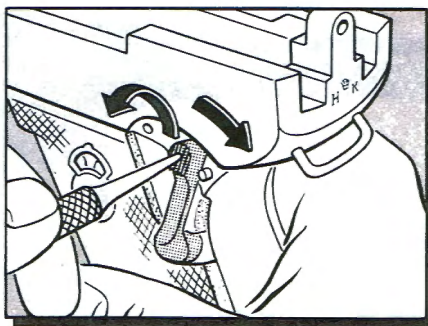
Under an excellent blue job, the Swedish-made Lahti shows a great deal of rough machining and hand finishing. Fortunately this does not detract from the reliability and accuracy of the gun, since critical operating parts and bore are well finished.



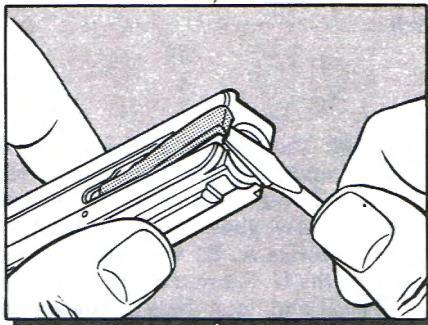
**1** The Lahti takedown is simple. First remove magazine and clear chamber. Hold barrel extension (2) back as shown, or push the muzzle against a hard surface; at same time rotate takedown catch (42). Barrel assembly is now slid forward off receiver



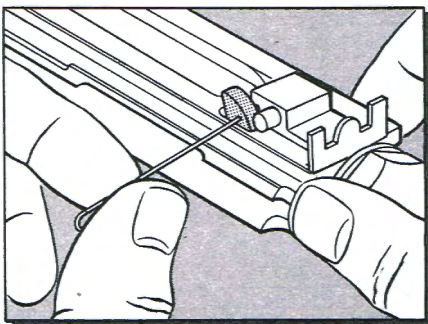
**2** After barrel and barrel extension are free of receiver, push locking block (8) up and withdraw slide (10). When replacing locking block, be sure arrow on underside of block is facing forward toward barrel



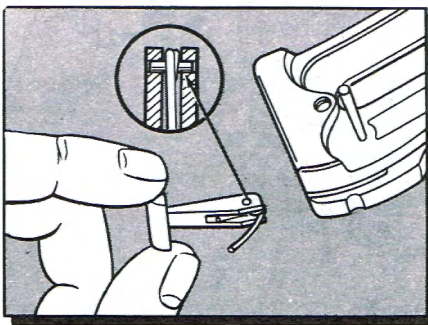
**3** Safety catch (39) must be removed before attempting removal of left grip. Insert a thin punch into hole in serrated portion of safety. Pry it back slightly, enough to swing it over stop pin in frame. Rotate it to horizontal position and pull it out



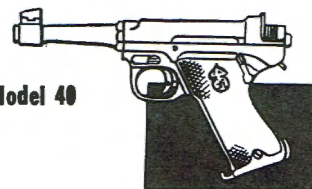
**4** Extractor (9) is long and flexible. It is removed by inserting a small screwdriver under lip to push it free of locking hole in slide (10), then prying it out of its seat



**5** The accelerator (6) is designed for easy removal. Simply rotate accelerator until small hole in its side lines up with spring-loaded retainer pin (4). Push a thin piece of wire or paper clip through hole to depress spring. Lift out accelerator



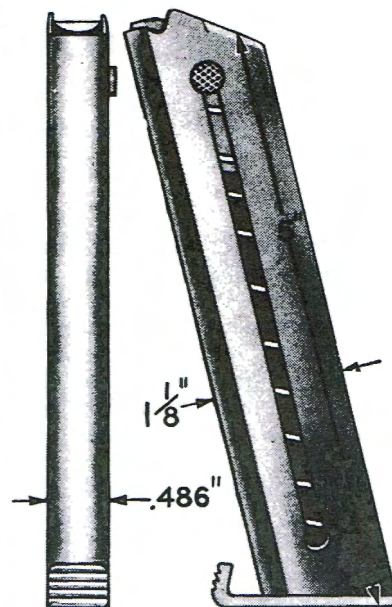
**6** Some Lahti parts are difficult to reassemble without the aid of short slave pins. To replace magazine catch (34) and spring (35), use a short pin to hold them together until in position. Incoming magazine pin will drive short pin out other side and spring will remain in its place



Lahti Model 40

## PISTOL MAGAZINES

One of a series



A few years ago a number of 9 mm. Lahti pistols were imported into America from Sweden. The Swedish gun is a slight modification of the original Finnish design. As handguns go, it is big and bulky but the grip is excellent. It is a locked breech recoil-operated design that will handle any of the various loadings of the 9 mm. Luger cartridge. In spite of the fact that Sweden was not a combatant in World War II, the guns usually show signs of hasty machining with numerous tool marks evident on Swedish Lahtis. The Finnish gun and Swedish copy are so similar that magazines are interchangeable.



Lahti magazines can usually be recognized by the rugged cast aluminum follower and Luger-type magazine button. The magazines are large, strong, and generally well made.



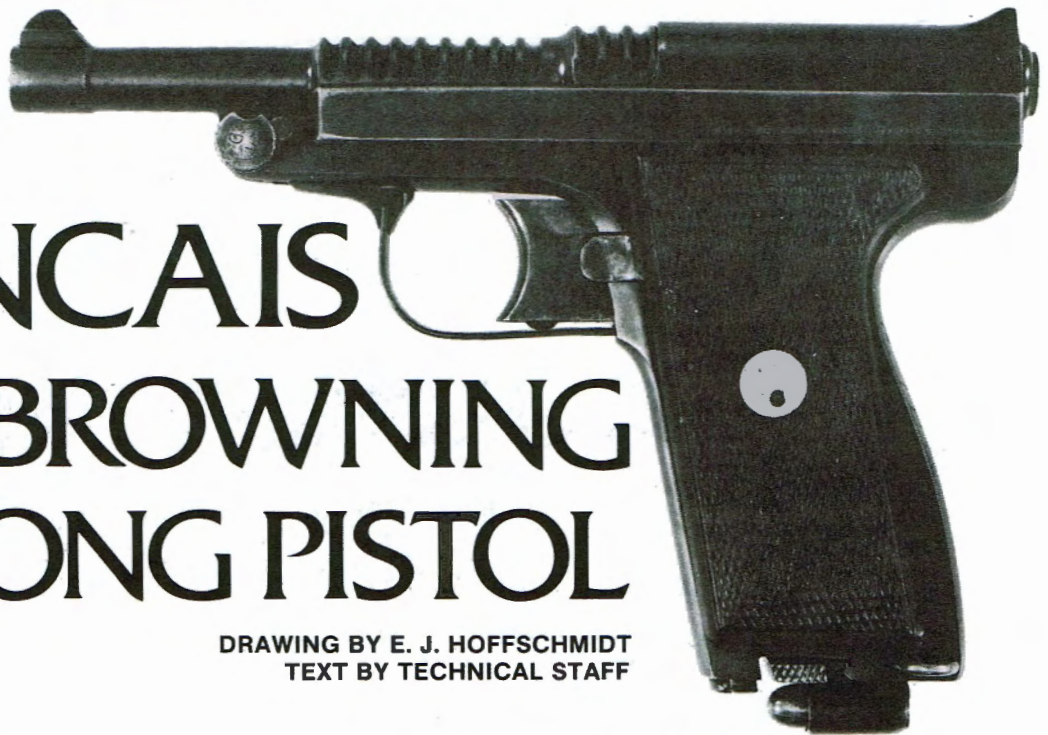
The floorplate is probably the best point of recognition. It is made from a flat steel stamping and affords an excellent grip when removing the magazine from the gun.—E. J. HOFFSCHMIDT



## EXPLODED VIEWS:

# LE FRANCAIS 9mm BROWNING LONG PISTOL

DRAWING BY E. J. HOFFSCHMIDT  
TEXT BY TECHNICAL STAFF



VARIOUSLY known as the Model 1928, the Armee Model, and the Le Francais Military Model, this pistol was made by Manufacture of St. Etienne, France from 1928 to 1938 to a quantity of around 4000.

This Le Francais is blowback operated, and quite similar in appearance and function to the more common and smaller Manufacture-made Le Francais pistols in 6.35 mm (.25 ACP) and 7.65 (.32 ACP).

The 9 mm Browning Long cartridge is more impressive in nomenclature than in ballistics, being little more effective than the standard .380 ACP. By modern standards it would be considered underpowered for a military load. It was never made in the U.S., and today is seldom encountered.

The Armee Model/M1928, despite its name, ingenious design and high quality, was never officially adopted by the French.

The M28 operates on the "double action only" system; a long trigger pull being necessary to cock and release the striker. It is impossible to avoid this long pull and fire the pistol in "single action" mode. The pistol lacks any manual safety.

Another significant design feature of the Le Francais is the "pop-up" barrel which is activated by a lever on the right side of the frame (or by the removal of the magazine). This makes the loading of the chamber easy, and eliminates the need for an extractor or slide serrations. The clip on the bottom of the magazine holds a single cartridge which is used for quick chamber loading.

Disassembly of the M28 is simple, once the procedures are known, and requires no tools. The M28 is one of those few pistols that utilizes no screws in its construction — not even a grip screw. ■



1.

Remove magazine (13) by pushing serrated wings of floorplate forward and down. Magazine removal automatically opens the barrel (1).



2.

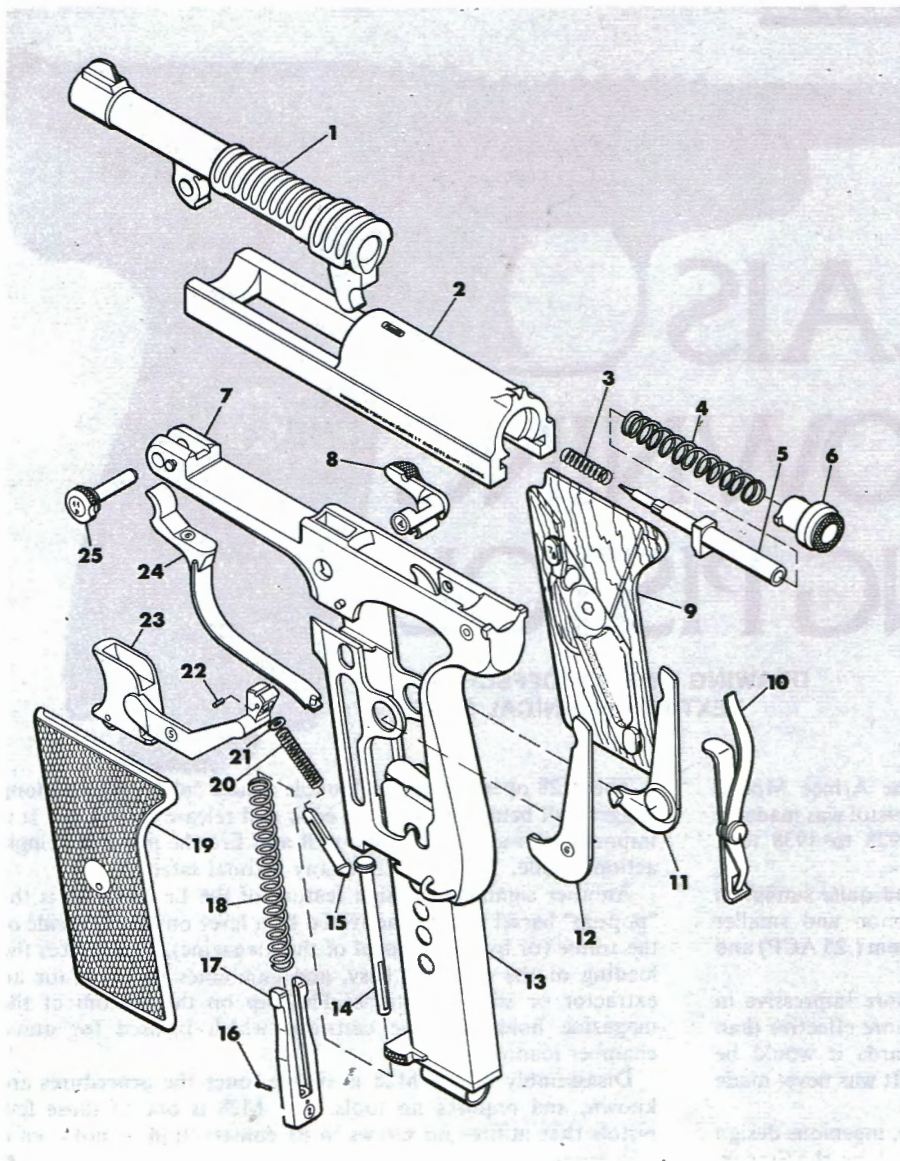
Turn the barrel hinge pin (25) until its notch mates with the frame lug. Holding the barrel firmly down in its closed position, remove the barrel hinge pin. Release the barrel slowly and remove it and the trigger guard (24) from the frame (7).



3.

Push the slide cap (6) in and turn it counterclockwise one-quarter turn. Remove slide cap, firing pin (5), main spring (4) and firing pin rebound spring (3). Slide (2) may now be removed by pulling its front end upward slightly.





#### Parts Legend

1. Barrel
2. Slide
3. Firing pin rebound spring
4. Mainspring
5. Firing pin
6. Slide cap
7. Frame
8. Barrel lever
9. Right grip
10. Barrel lever spring
11. Right recoil lever
12. Left recoil lever
13. Magazine
14. Recoil spring guide
15. Trigger strut
16. Recoil link pin
17. Recoil link
18. Recoil spring
19. Left grip
20. Trigger spring
21. Trigger spring washer
22. Trigger strut pin
23. Trigger
24. Trigger guard
25. Barrel hinge pin



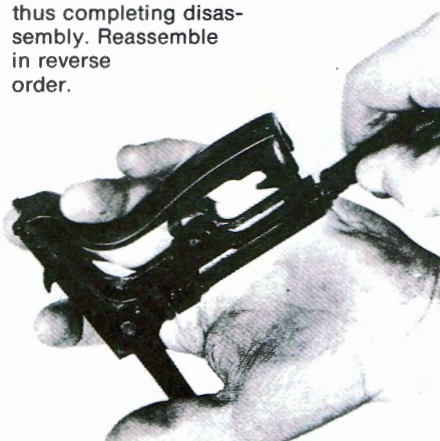
**4.**  
Slide right and left grips (9 & 19) straight up and remove them.



**5.**  
Push the frame down with the recoil link (17), which protrudes from the bottom front of the grip, bearing on a hard surface. With pressure on pt. 17, the recoil levers (11 & 12) can be removed. The trigger assembly (23) can now be lifted from the frame, as can the barrel lever spring (10).

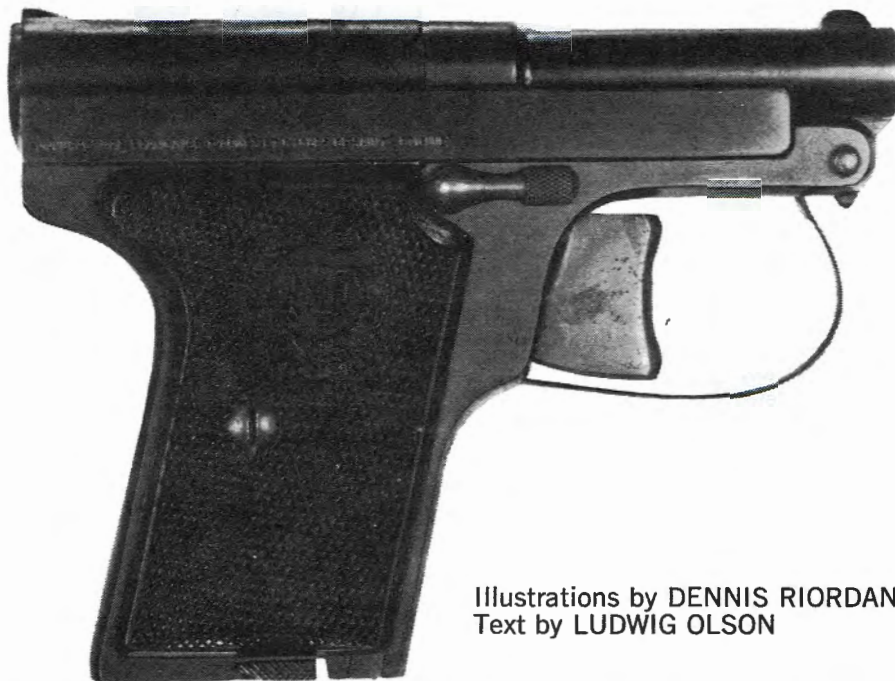
#### 6.

By pressing the sides of the recoil link together, it and the recoil spring assembly (18) can be withdrawn. The barrel lever (8) will now be free and can be removed, thus completing disassembly. Reassemble in reverse order.





# LE FRANCAIS POCKET MODEL PISTOL

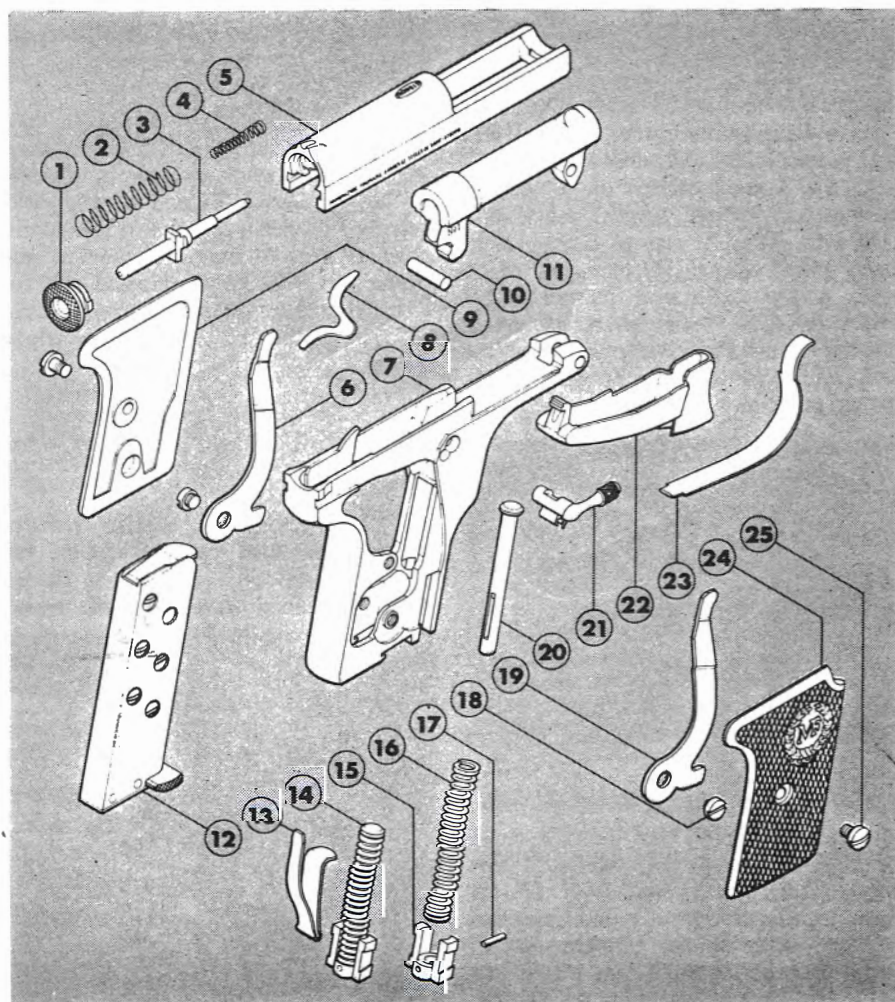


Illustrations by DENNIS RIORDAN  
Text by LUDWIG OLSON

A number of semi-automatic pistols feature a double-action lock mechanism which permits the pistol to be carried safely uncocked with chamber loaded, and fired quickly like a double-action revolver simply by pulling the trigger. This desirable feature and several others are incorporated in the Le Francais Pocket Model cal. .25 ACP semi-automatic pistol introduced about 1914 by Manufrance (Manufacture Francaise d'Armes et Cycles de Saint Etienne), St. Etienne, France.

The double-action lock mechanism of this blowback-operated pistol is simple and ingenious. Pulling the trigger forces back the firing pin and compresses the mainspring. While moving back, the upper rear part of the trigger follows a cam surface in the frame. This causes the trigger to move down near the end of its rearward travel and release the firing pin which is driven forward by the mainspring to fire the cartridge. When the trigger is released, it is pushed forward by the trigger spring. The firing pin is held slightly rearward by the firing pin rebound spring, but is uncocked. Since the firing pin is not cocked except when the trigger is pulled, a safety lock is unnecessary and not provided.

Another desirable feature of this well-designed arm is its tip-up barrel which permits loading and unloading



## PARTS LEGEND

1. Slide cap
2. Mainspring
3. Firing pin
4. Firing pin rebound spring
5. Slide
6. Left recoil lever
7. Frame
8. Trigger spring
9. Left grip
10. Barrel pin
11. Barrel
12. Magazine
13. Barrel lever spring
14. Recoil spring assembly
15. Recoil link
16. Recoil spring
17. Recoil link pin
18. Recoil lever screw (2)
19. Right recoil lever
20. Recoil spring guide
21. Barrel lever
22. Trigger
23. Trigger guard
24. Right grip
25. Grip screw (2)

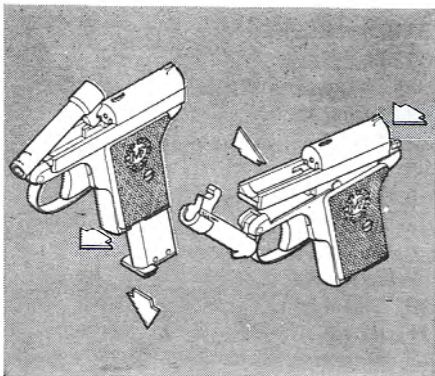


the chamber without retracting the slide. This makes the pistol easy to operate, even for weak women. The barrel pivots open under spring pressure when the barrel lever on the right side of the frame is depressed. It also pivots open automatically when the magazine is removed. Unloading the chamber after the magazine is removed is thereby not forgotten, and no magazine safety is required.

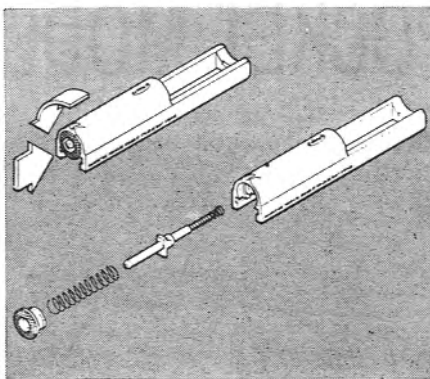
Well made and finished, this compact arm with blued finish and checkered hard-rubber grips weighs only 11¾ ozs. unloaded, and has a seven-round magazine. In the early version of this pistol, the magazine is detached by pulling it slightly forward and then down. The later version has a conventional thumb-operated magazine release in the lower rear of the frame. Also, the rear part of the frame is more slanted in the late version than in the early to give an improved grip.

Extraction in this pistol is by blow-back force only, and an extractor is not provided. Despite this, functioning is reliable. Accuracy is excellent for a pocket pistol.

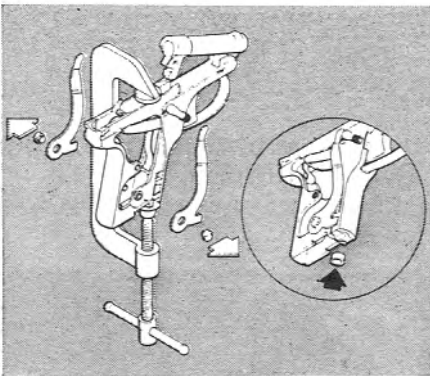
There also are larger Le Francais blowback-operated pistols in calibers .25 ACP and .32 ACP. The Policeman Model in cal. .25 ACP has a domed mainspring housing at the rear of the frame and a longer barrel than the Pocket Model. A blowback-operated Military Model in cal. 9 mm. Browning Long was introduced about 1928, but was discontinued shortly before World War II. ■



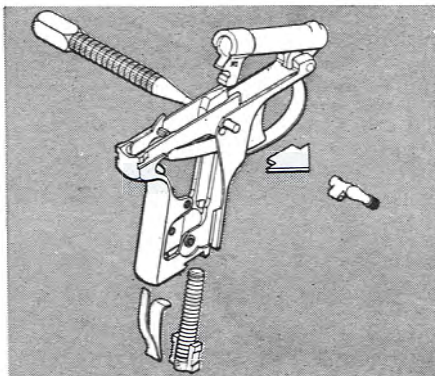
**1** Takedown of Le Francais begins with removal of magazine (12). To do this, pull forward and down on knurled wings extending from sides of magazine bottom. Barrel (11) automatically tips up as magazine is withdrawn. Remove any cartridge from chamber. Pivot barrel fully upward, and lift slide (5) up and forward off frame (7). Later versions of this pistol have a conventional butt-mounted magazine catch, but takedown procedures are similar to above.



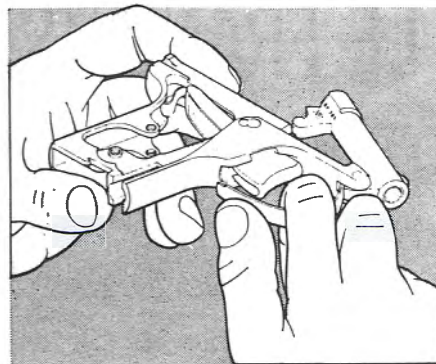
**2** Press slide cap (1) forward into slide, rotate ¼ turn counterclockwise, and ease out to rear. Remove mainspring (2), firing pin (3), and rebound spring (4). This completes field stripping for normal cleaning.



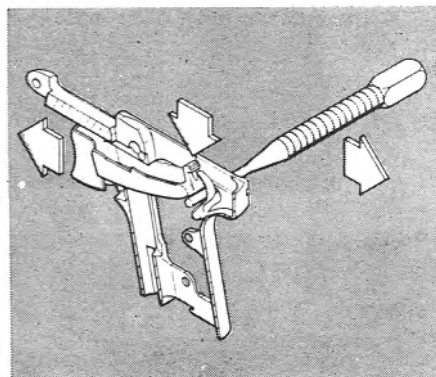
**3** To disassemble further, unscrew grip screws (25) and remove grips (9) (24). Cut a short section of ¼" copper tubing, and tighten against recoil link (15) with clamp or vise to slightly compress recoil spring (16). Unscrew recoil lever screws (18), and remove recoil levers (6) (19). These levers are offset slightly to provide clearance for trigger (22), and must be replaced with offsets facing outward.



**4** Release clamp, and remove recoil spring assembly (14) and barrel lever spring (13). Move barrel lever (21) to down (released) position, and push out of frame with punch. Straight leaf of barrel lever spring must seat within barrel lever's notched lug during reassembly.

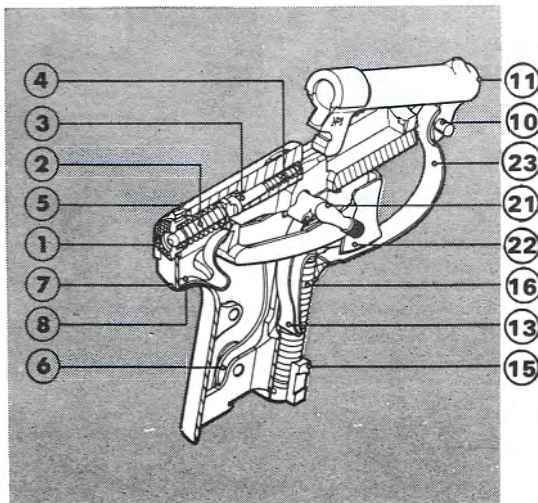


**5** Holding pistol in left hand, pull rear of trigger guard (23) out of frame with right forefinger, keeping the guard bowed with pressure from right thumb and middle finger. Release pressure and rotate guard forward out of frame. Barrel can now be removed by driving out its pin (10).



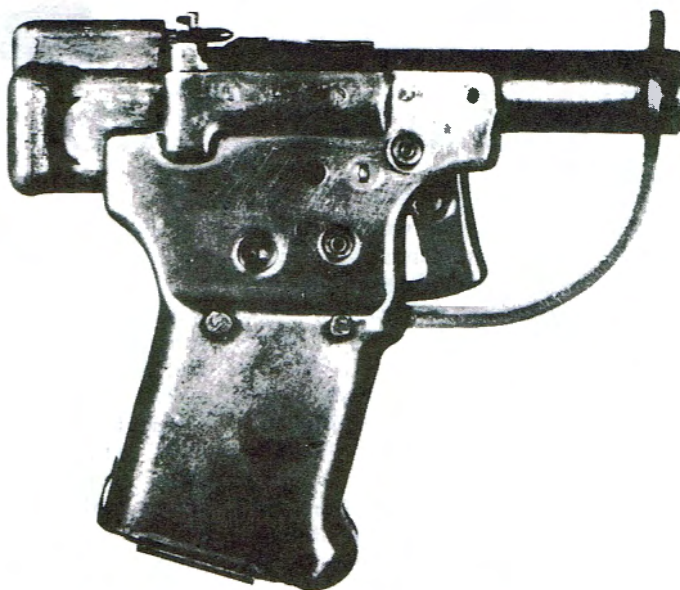
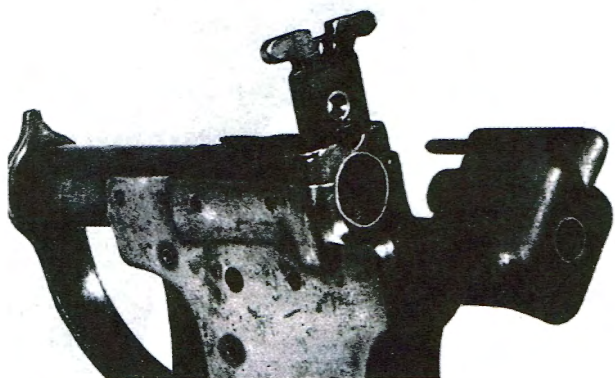
**6** Insert a punch between trigger and trigger spring (8), and flex the spring rearward to disengage from trigger. Press down on rear of trigger to unlatch from frame and slide trigger forward and out. Remove trigger spring. The late version of this pistol has a coil-type trigger spring.

**7** Cutaway indicates relative positions of assembled parts. Magazine has been removed, causing barrel to tip up. Parts are number keyed to parts legend.





Absence of ejector and extractor permitted simple breech construction. Note fixed firing pin in percussion mechanism and rear sight notch in loading gate



Large trigger guard permitted firing with gloved hand. It extends above muzzle to form front sight

# Liberator Gun

By M. D. Waite

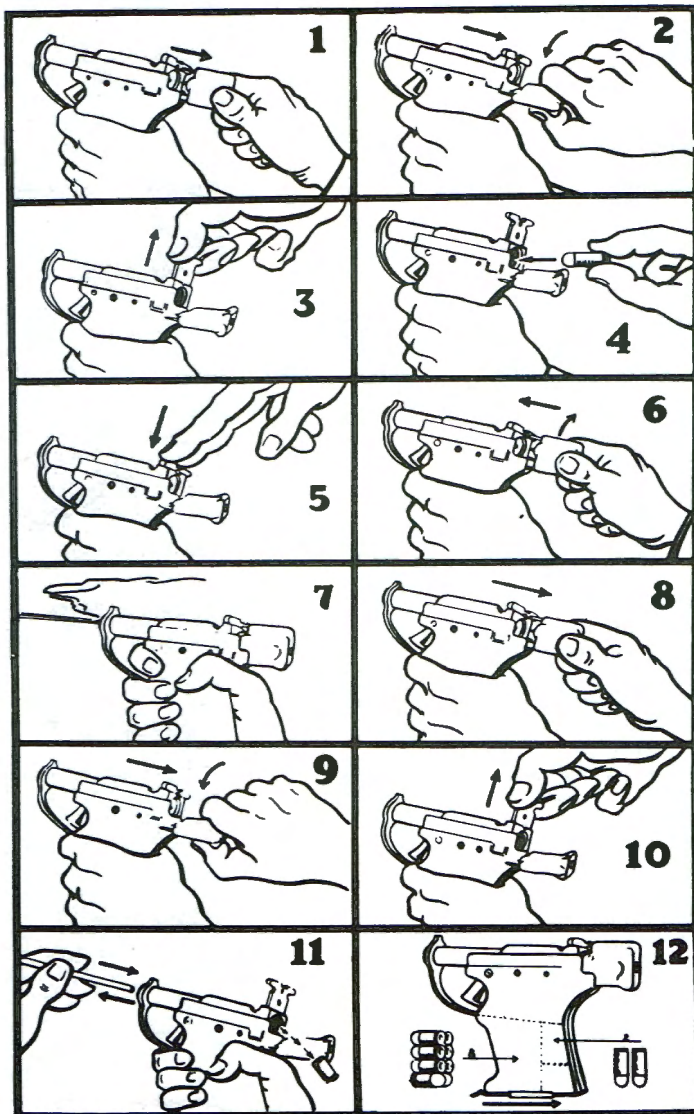
THE arming of partisan or other resistance forces within Nazi-occupied territories became a major problem to the Allies during World War II, especially since the production of such armament was carried out in addition to that for normal troop requirements. U. S. Army Ordnance, through its vigorous research and development program, made many significant contributions towards this little publicized effort, not the least of which was development and production of the rather unique 'Liberator' pistol.

The demand for this gun originated with the Office of Strategic Services (OSS), as that organization was vitally interested in arming resistance forces in Europe. OSS specifications called for a cheap but effective gun weighing one pound, and they wanted a million of them in a hurry!

The basic design for an effective .45 caliber single-shot pistol was soon formulated by Army Ordnance and the contract was let to the Guide Lamp Corporation, who completed tooling and production of the million guns in the record time of *thirteen weeks*. Final deliveries were made during the month of August, 1942. The ultimate cost of each unit was a little over \$2.00 and the guns were constructed entirely of non-strategic materials. Each gun was individually packaged in a sturdy, paraffin-coated, cardboard box. Included were an instruction sheet, a wooden ramrod, and ten rounds of .45 ACP ammunition stored in the butt of the gun. With the exception of the 4-inch smoothbore, seamless steel tubing barrel and die-cast percussion mechanism, the gun is constructed throughout of sheet steel stampings and a few small steel pins and coil springs. The various parts are held together by a combination of folded seams, rivets, spot and acetylene welds. The net result is a very crude-looking weapon, but it was nevertheless a significant contribution towards the Allied war effort, based upon the theory that "some gun is better than none at all."

A study of the instruction sheet reveals that this is a very simple weapon to operate even though it lacks both an extractor and ejector. ♦ ♦ ♦

Firing sequence instruction sheet shows every phase of gun operation





# The Luger Pistol

**I**N 1893 the German firm of Ludwig Loewe offered what was destined to become the first commercially-successful self-loading pistol chambered for a high-velocity smokeless powder cartridge. Known as the Borchardt, after its American inventor Hugo Borchardt, this new pistol featured a revolutionary toggle breech mechanism designed in principle by Sir Hiram Maxim of Maxim machine gun fame.

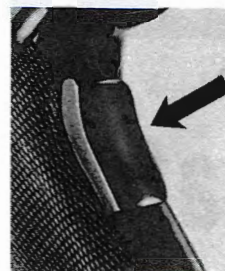
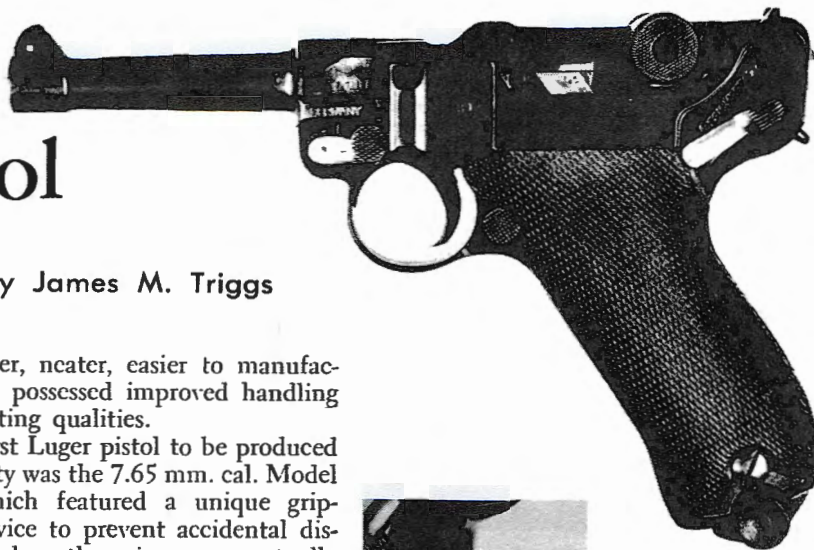
Although well received, the Borchardt pistol had a relatively short production life, thanks to design improvements effected by Georg Luger and patented by him in 1900. Although preserving the toggle-breech principle and removable-clip magazine, Luger's redesign was drastic in concept. The resultant pistol

By James M. Triggs

was lighter, neater, easier to manufacture, and possessed improved handling and pointing qualities.

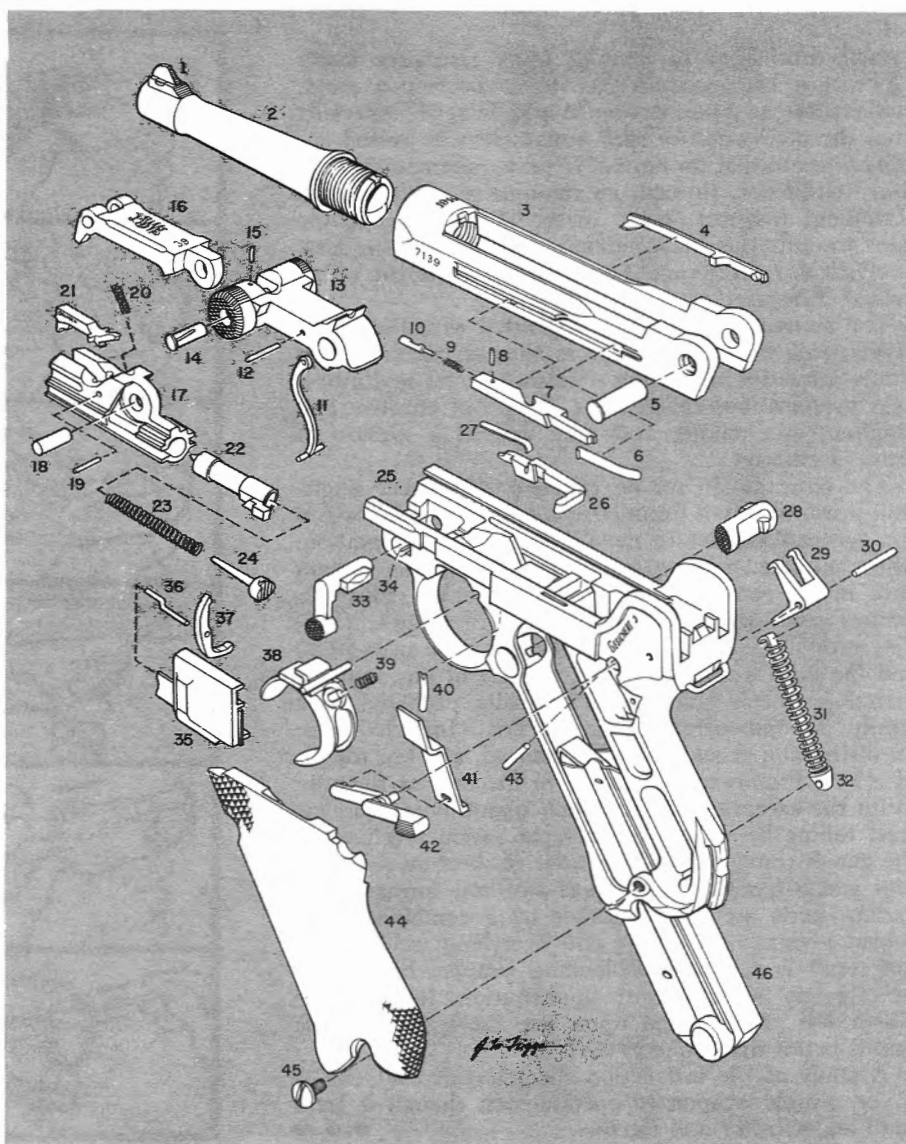
The first Luger pistol to be produced in quantity was the 7.65 mm. cal. Model 1900, which featured a unique grip-safety device to prevent accidental discharge unless the piece was actually grasped in normal firing position.

Switzerland, in 1901, became the first nation to adopt the Model 1900 Luger pistol as an official service arm. It is interesting to note that U. S. Ordnance also in 1901 purchased 1000 Model 1900 Luger pistols for a subse-



## LEGEND

1. Front sight
2. Barrel
3. Receiver
4. Ejector
5. Receiver axle
6. Trigger bar spring
7. Trigger bar
8. Trigger bar plunger pin
9. Trigger bar plunger spring
10. Trigger bar plunger
11. Coupling link
12. Coupling link pin
13. Rear toggle link
14. Toggle axle
15. Toggle axle pin
16. Forward toggle link
17. Breechblock
18. Breechblock pin
19. Extractor pin
20. Extractor spring
21. Extractor
22. Firing pin
23. Firing pin spring
24. Firing pin spring guide
25. Frame
26. Hold-open latch
27. Hold-open latch spring
28. Magazine catch
29. Recoil lever
30. Recoil lever pin
31. Mainspring
32. Mainspring guide
33. Locking bolt
34. Locking bolt spring
35. Trigger plate
36. Trigger lever pin
37. Trigger lever
38. Trigger
39. Trigger spring
40. Magazine catch spring
41. Safety bar
42. Safety catch
43. Safety pin
44. Grip (2—right-hand grip not shown)
45. Grip screw (2)
46. Magazine (shown partially withdrawn)





quent field trial which resulted in ultimate rejection of the design.

In 1902, Deutsche Waffen und Munitionsfabriken (DWM), manufacturer of the Luger pistol, offered the Model 1902 chambered for a new 9 mm. cal. rimless cartridge.

Designated the 9 mm. Parabellum, this new development was destined to become the world's most widely used pistol and submachine gun cartridge.

The Model 1902 was subsequently improved to become the Model 1904, adopted in 1904 by the German Navy. Although chambered for the 9 mm. Parabellum cartridge, it had the same grip safety, toggle lock, and flat mainspring of earlier models. The year 1904 also saw the introduction of the Luger carbine with extra-long barrel, wooden forearm, and detachable shoulder stock.

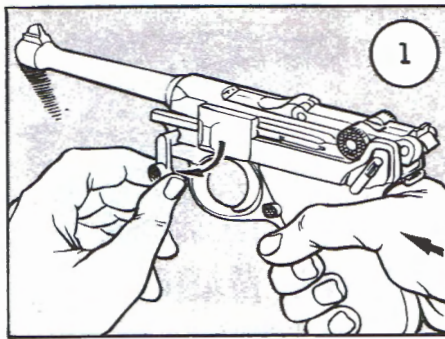
In 1906 DWM offered the improved Model 1906, which featured a coiled

(text continued on next page)

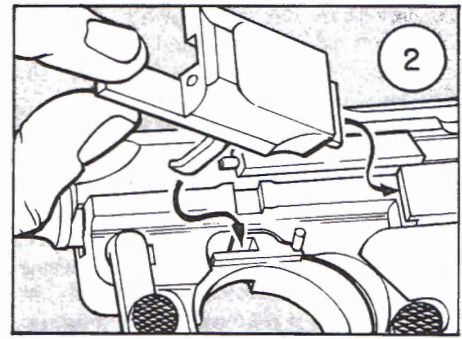
#### DISASSEMBLY PROCEDURE OF RECEIVER AND FRAME

In disassembling receiver (3), ejector (4) is removed by inserting blade of small screwdriver under rear end of ejector in recess provided in the receiver wall and prying up gently. Reassemble ejector by sliding it back into position from the rear until it snaps into place. Pry up forward end of trigger bar spring (6) with screwdriver blade and slide spring forward and out of its slot. Trigger bar (7) may be lifted out of its recess in left side of receiver with the fingers.

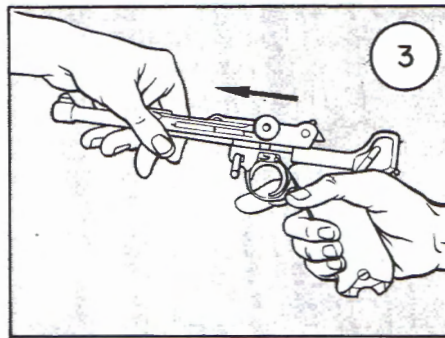
In disassembling frame, grips are removed by unscrewing the two grip screws (45). Trigger (38) can be lifted out of frame with the fingers, using care not to lose trigger spring (39) which is seated at the top of trigger. Magazine catch spring (40) may be pressed sideways out of its recess in frame with tip of small screwdriver. Magazine catch (28) may now be dropped out of right side of frame. Locking bolt (33) may be removed with the fingers. In reinserting locking bolt, it will be necessary to overcome tension from locking bolt spring (34) which is installed in frame inside locking bolt hole. Removal of this spring is not recommended unless necessary for replacement. Hold-open latch (26) and spring (27) are removed by lifting rear end of latch slightly and pressing *down* and to the rear on latch, disengaging latch and spring assembly from frame. Safety catch (42) and safety bar (41) are removed by drifting out safety pin (43) from inside of frame. Disassembly of recoil lever (29), mainspring (31), and mainspring guide (32) should be left to a competent gunsmith. Strong compression of mainspring will project guide with considerable force if lower end of guide is carelessly slipped out of its seat. While it is possible to reassemble mainspring and guide to recoil lever by hand, it is extremely difficult, requiring considerable effort.



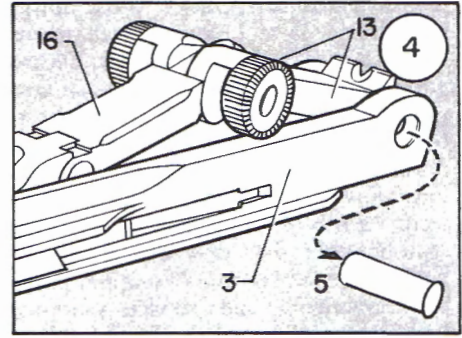
**1** Remove magazine and check to be sure pistol is unloaded. Press muzzle against a hard surface, moving barrel and receiver assembly back on frame about 1/4" to release tension on recoil spring, then turn locking bolt (33) to vertical position as shown



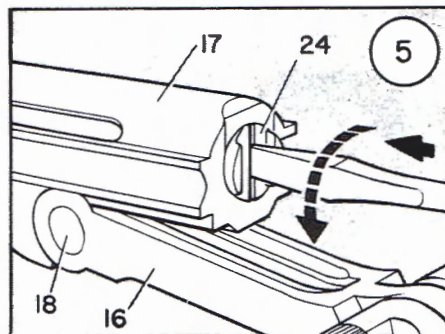
**2** Lift out trigger plate assembly (35) from frame, as shown. When reassembling pistol, trigger lever (37) in trigger plate must fall into its slot in trigger (38) and small lip at rear of trigger plate must be inserted under side of frame in recess provided



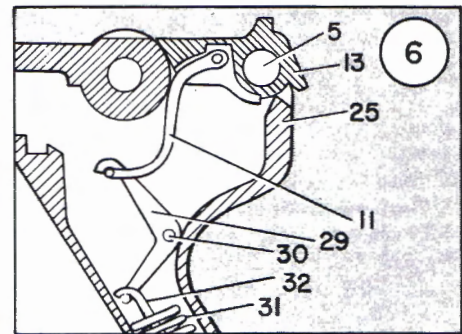
**3** Slide complete barrel, receiver, and breech assembly forward and out of receiver as shown. During this operation, note the position of the coupling link (11) with relation to recoil lever (29) in rear of frame for reference in reassembly



**4** Grasp knurled knobs of rear toggle link (13) and pull upward, buckling rear and forward toggle links (13 & 16) slightly to relieve tension. Press receiver axle (5) in slightly from right side of receiver with finger tip. Axle may now be grasped from left side of receiver and withdrawn. Toggle and breechlock assembly can now be withdrawn from the rear of receiver



**5** Invert toggle and breechblock assembly and insert a screwdriver blade in slot in firing pin spring guide (24) in rear of breechblock (17). Press guide in about 1/16" and turn counterclockwise 1/4 turn and allow firing pin spring guide and firing pin spring (23) to come out, taking care not to allow compressed spring to escape. Firing pin (22) can now be dropped out rear. Extractor (21) may be removed by holding thumb over top of breechblock and extractor, and drifting out extractor pin (19), allowing extractor to pop up. Lift extractor out and extractor spring (20) may now be lifted out of its seat



**6** The above steps complete normal field stripping necessary for cleaning and lubrication. Reassembly is accomplished in reverse order. When replacing barrel, receiver, and breech assembly on frame, be sure coupling link (11) suspended from rear end of toggle assembly drops into its proper place in front of inclined upper arms of recoil lever (29). The proper relationship of these parts assembled is shown here



rather than flat mainspring. This was the first of the so-called New Model Lugers and all earlier versions were thus automatically grouped in the Old Model category. The Model 1906 was equipped with grip safety but lacked the toggle-locking device found on earlier models.

Despite relatively early adoption by the German Navy, the German Army waited until 1908 to adopt what became known as the Pistole 08 or Model 1908 Luger pistol. Of coiled mainspring type, the Model 1908 was of 9 mm. Parabellum caliber and lacked the grip-safety feature. Early Model 1908 Lugers were not fitted with the hold-open device subsequently adopted.

Shortly after Army acceptance of the Pistole 08, an additional manufacturing facility was established in Erfurt, Germany, at the Royal Arsenal. All Luger pistols issued to German forces during the World War I period were manufactured by DWM or at Erfurt. During and after World War I a flood of war-souvenir Luger pistols were brought to the U. S. by returning servicemen. Additional quantities were imported by various arms dealers. Many of these pistols were assembled from parts or rebuilt in such manner that they operated unreliably. In many instances original proof, manufacturer's, and service markings had been obliterated or ground off. A comparatively few dealers succeeded in obtaining good-quality Luger pistols for the U. S. market.

After World War I the firm of Simon & Company, located in Suhl, Germany, furnished the Luger pistols used by the new 100,000-man German Reichswehr authorized by the Versailles Treaty. This contract was completed in 1932. In 1930 production of Luger pistols was resumed by the Mauser firm in Oberndorf, Germany, with production continued during World War II.

The firm of Heinrich Krieghoff also produced a quantity of Luger pistols for the German Luftwaffe during the early 1930's.

German production of the Luger pistol ceased with the termination of World War II, although a few guns were assembled for occupation forces after the war was over.

Luger pistols were at one time produced in England by the Vickers firm and by Swiss government-subsidized arsenals. As of this date, however, no Luger pistols are being manufactured.

It is important to note that several different models of the Luger pistol exist.

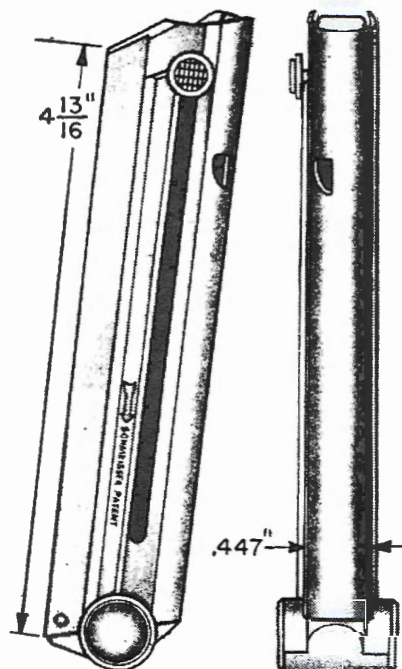
Basic field disassembly is the same for all models, although the presence or absence of grip safety, toggle lock, hold-open device, etc., will affect procedures for detailed disassembly. —

Luger 9 mm. &  
.30 Cal. Auto

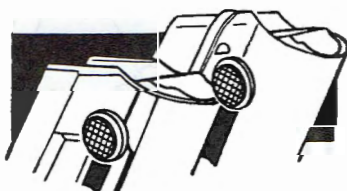


## PISTOL MAGAZINES

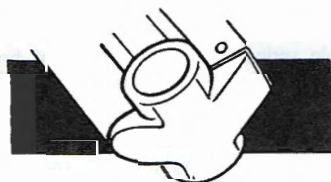
One of a series



Luger magazines are numerous, but their quality varies. While the early stamped magazines with their wooden plugs are adequate, magazines made before and during World War II are far stronger. The best of these late magazines were machined from steel extrusions by Haenel. Some are marked as shown.



The machined magazines can be recognized by the smooth panels on the sides of the feed lips. Sheet metal magazines have ribs of folded sheet metal running from the base plug to the feed lips.



The base plug that identifies the Luger magazine was generally made from wood until the early 1930's. Later magazines will be found with either aluminum, zinc, or plastic base plugs.—E. J. HOFFSCHMIDT

## Try It This Way

### Loose finger levers

In endeavor to correct the loose finger lever of a Ballard rifle, I inletted in the bottom tang a small Alnico magnet of the type available commercially. This worked so well in holding up the lever without shake that now I have such magnets installed in all the single-shot rifles in my collection.—MANNING DISTELMAN

### Rust remover

One of the best, cheapest, and least harmful rust removers is turpentine. Rust saturated with it can be readily removed if the rusting has not gone too far. It will not damage a blued finish. An old iron barrel can often be rubbed down to an antique brown color with turpentine, and then linseed oil applied, making an old gun presentable.—OTTO A. WAGNER

### Gunstock shaping

When shaping the outside of a new gun stock, I find it very useful to work a few feet below a light bulb. The shadow lines produced will indicate deviations from lines desired. On a straight-line surface such as a forearm, an auto body file worked straight with the grain leaves a shine on the high spots so they can be marked and removed.—FREDRICK HOP

### Drilling for stock through-bolt

Holes for shotgun stock through-bolts can be drilled much more accurately when a center pin is used in the drill-press table. Hole in table must line up with spindle; it can be trued, if necessary, with a boring bar in the drill chuck. Make center pin to fit table hole, and turn upper end of pin to 60° conical point. The pin need not be hardened. Drill halfway through stock from each end.—VERNER A. SARNS

### Expedient for polishing

Needing a small mandrel to polish the inside of a trigger guard, I took a cotton swab (used for shotgun cleaning), soaked it with glue, and rolled it in very fine emery grit. An inaccessible contour can be easily reached.—ROBERT PEAK

### Extracting pistol magazine

When I placed target stocks on my Hi-Standard Supermatic, it was difficult to extract the magazine, with the slide open, as the magazine was then deeply buried. This was corrected by attaching a knurled electric-ceiling-fixture retaining nut to the magazine floorplate for easy grasping. This should work on other autoloading pistols as well.—DONALD DOWNES

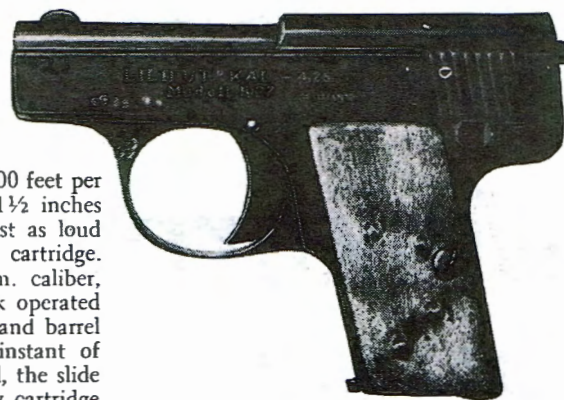
### Stock carving tools

I made some very satisfactory stock carving tools by brazing artist's linoleum block carving blades (cost about 35¢ each) to pieces of 1/8" welding rod 6" long, and putting on a purchased handle. Stick each blade about 3/8" into a potato during the brazing to safeguard the temper.—T. A. LEWIS



# 4.25 mm. Liliput Automatic

By E. J. Hoffschmidt



It's small and expensive. This description could fit many objects, but in this case it describes the 4.25 mm. Liliput automatic pistol. It's small—only 3½ inches long and weighs only six ounces. It's expensive—ammunition is so scarce that it sells for one or two dollars a round.

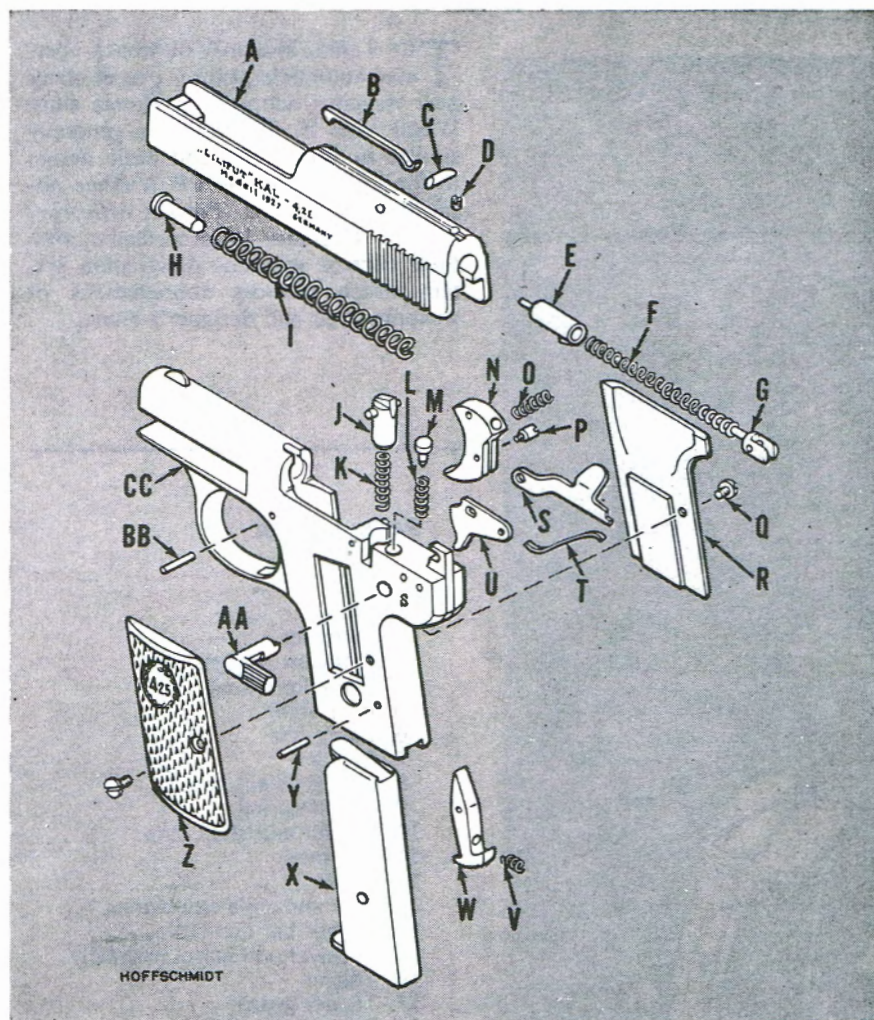
These Liliput pistols were first manufactured in 1925 by the firm of August Menz of Suhl, Germany. In spite of its eye appeal, not too many were sold, partly due to the depression in Germany around this time, and partly due to the fact that its tiny cartridge is not a very potent one. Yet the gun is not a toy, for it fires a 14-grain

jacketed bullet at approximately 800 feet per second and will penetrate about 1½ inches of soft pine. The report is almost as loud as that of a .25 automatic pistol cartridge.

Like most pistols under 9 mm. caliber, the Liliput is a straight blow-back operated gun, which means that the slide and barrel are not locked together at the instant of firing. When the cartridge is fired, the slide is driven back, ejecting the empty cartridge case and chambering a fresh round from the magazine on the return trip.

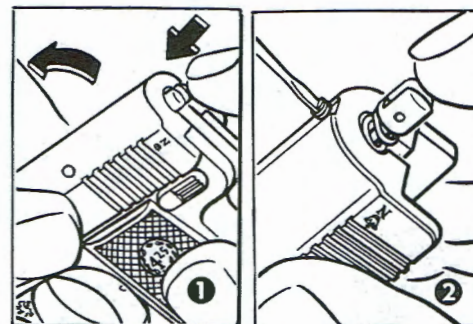
These tiny automatics were well made, and finely finished, and the design is simple and reliable. All metal parts are made from

steel. The barrel is machined as an integral part of the frame. The rest of the operating parts are simple shapes that can be easily reproduced in case of loss or breakage. The repair procedure is simple. Since the operating parts are not inside the frame, they can be removed by simply taking off the right-hand grip. ♦ ♦ ♦



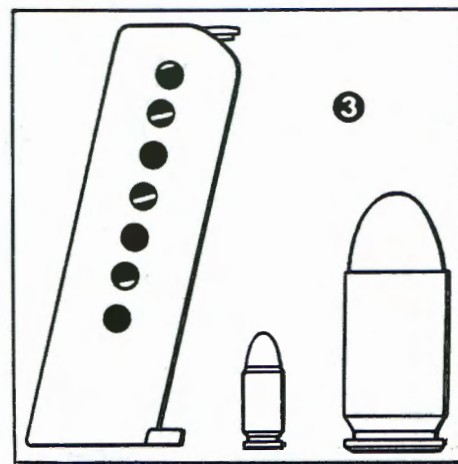
## LEGEND

- |                                |                           |                         |
|--------------------------------|---------------------------|-------------------------|
| A Slide                        | K Sear Spring             | T Trigger Bar Spring    |
| B Extractor                    | L Safety Catch Spring     | U Rear Operating Lever  |
| C Extractor Retaining Pin      | M Safety Catch Plunger    | V Magazine Catch Spring |
| D Spring Guide Retaining Screw | N Trigger                 | W Magazine Catch        |
| E Firing Pin                   | O Trigger Spring          | X Magazine              |
| F Firing Pin Spring            | P Trigger Bar Pivot Screw | Y Magazine Catch Pin    |
| G Firing Pin Spring Guide      | Q Grip Screw              | Z Left-Hand Grip        |
| H Recoil Spring Guide          | R Right-Hand Grip         | AA Safety Catch         |
| I Recoil Spring                | S Trigger Bar             | BB Trigger Pin          |
| J Sear                         |                           | CC Frame                |



When 'taking down' the Liliput, first remove the magazine. Then check to be sure that the gun is empty, pull back the slide as far as it will go, and push in on the end of the firing pin spring (F), and guide (G). Lift the rear parts can be lifted off run it forward off the receiver

The only part that presents any problem is the firing pin. The spring guide retaining screw (D) is all that holds it in. Remove it and you get the firing pin spring (F), and firing pin (E). The other parts can be lifted off run it forward off the receiver



Some idea of the Liliput's size can be gained by comparing the magazine and a cartridge with a standard .45 caliber automatic pistol cartridge

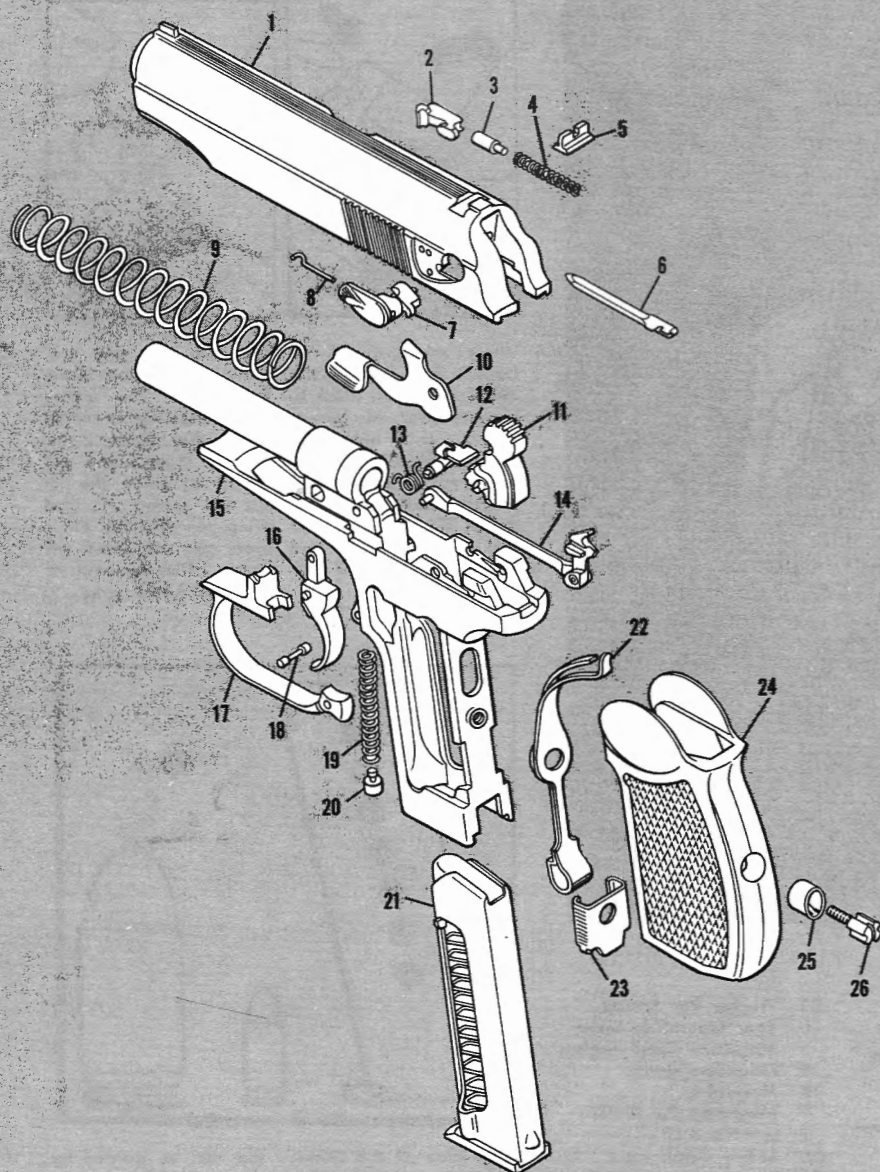


# The Makarov Pistol

By E. J. HOFFSCHMIDT



THE 9 mm. Makarov blowback-operated automatic pistol is one of many new weapons adopted by Russia since World War II. The pistol is generally similar in appearance and basic design to the German Model PP Walther pistol. It is called PM (*Pistolet Makarov*) by the Russians in accordance with their current weapons designation system which includes abbreviations of weapons type and designer's name.



## Parts Legend

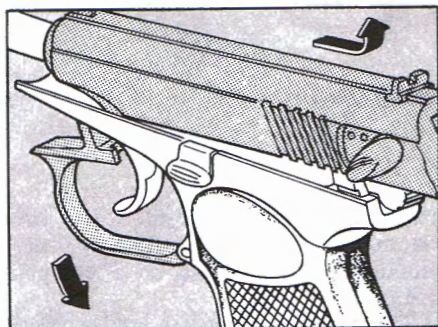
1. Slide
2. Extractor
3. Extractor plunger
4. Extractor spring
5. Rear sight
6. Firing pin
7. Safety
8. Safety detent spring
9. Recoil spring
10. Ejector and slide stop
11. Hammer
12. Sear
13. Sear and slide stop spring
14. Trigger bar assembly
15. Receiver and barrel assembly
16. Trigger
17. Trigger guard
18. Trigger guard pin
19. Trigger guard spring
20. Spring plunger
21. Magazine
22. Hammer and trigger spring
23. Spring retainer
24. Grip
25. Grip screw detent bushing
26. Grip screw



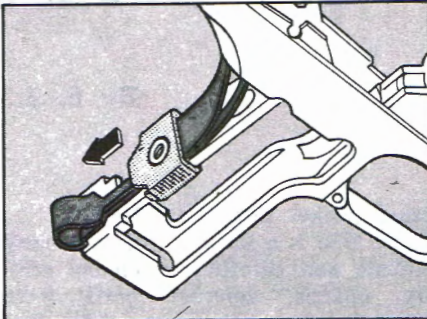
The lock mechanism of this pistol is of double-action type, and the hammer is exposed. The safety, on the left of the slide, is engaged in safe position when horizontal. A slide stop is provided on the left side above the grip. The bore is chrome plated. The one-piece plastic grip extends around the back of the receiver.

This pistol fires a rimless, straight-case cartridge midway between the .380 ACP and 9 mm. Luger in size and power. The round-nose bullet weighs 94 grs., and muzzle velocity is 1033 f.p.s. (feet per second).

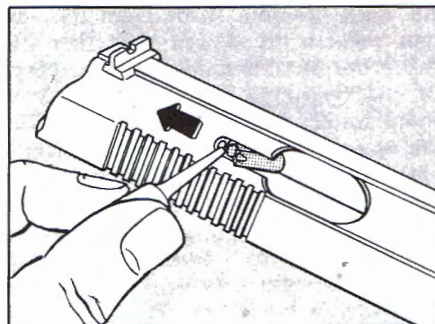
The Makarov is also made and used by East Germany. The pistol shown is of East German manufacture.



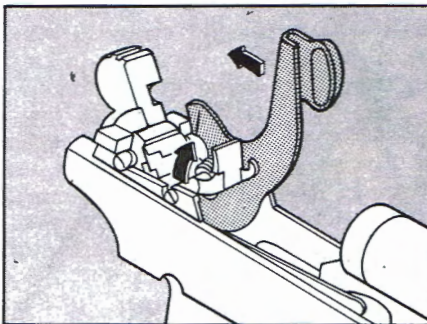
**1** To field strip, first remove the magazine and clear the chamber. Put the safety (7) in fire position. Pull down on the front of the trigger guard (17) until it clears the receiver (15). Pull the slide (1) to the rear, lift the slide up, and ease it forward off the receiver.



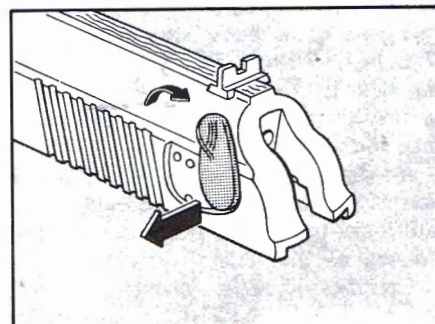
**4** Remove grip screw (26). Grip (24) can be slid off receiver. This will expose the hammer and trigger spring (22). This spring acts as the magazine catch, hammer spring, and trigger spring. To remove, pull down on spring retainer (23) until free; then lift spring off boss in receiver.



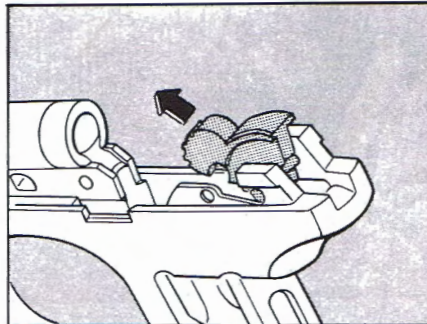
**2** To remove the extractor (2), use a thin punch to push the plunger (3) back into the slide. Turn the slide on its right side. Extractor should drop out. If not, rotate the extractor in toward the firing pin hole or in such a way as to remove the tail section from the slide first.



**5** The next step is to unhook the tail of the sear and slide stop spring (13) from the ejector and slide stop (10). After the spring is free, rotate the slide stop up as shown. Then use it as a lever to lift the sear (12) out of its hole in the right of the frame.



**3** The firing pin (6) is retained by the safety (7). To remove the safety, push it up beyond the safe position. It can be rotated as shown only when the slide is held to the rear or off the gun completely.

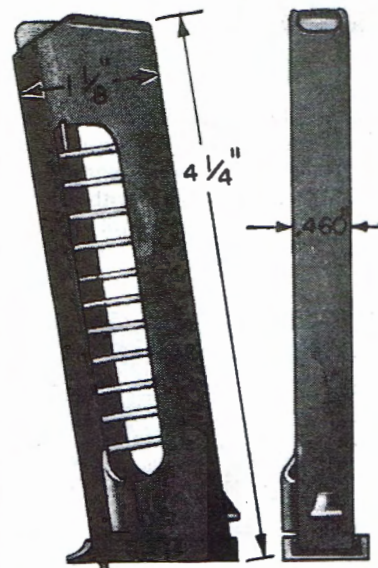


**6** The hammer (11) is one of the last parts to be removed. It can be removed in only one position. Rotate the hammer forward as shown, and pull it forward free of the receiver.

## PISTOL MAGAZINES



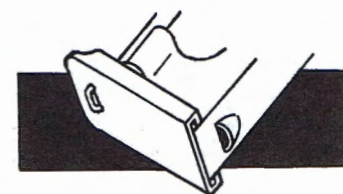
Makarov  
Model PM  
Pistol



The 9 mm. Makarov PM pistol is an interesting Soviet design. Body of its well-made magazine seems to be a thin-walled extrusion with long observation slots on both sides.



The sturdy sheet metal follower has a projection extending out through an opening on the left side of the magazine. This projection actuates the hold-open catch when magazine is empty. It also serves as a stop to prevent the follower from pressing upward against the magazine lips.



The floorplate is detached by depressing the spring that extends through it. Other identity points are the projections on the lower end of the backstrap and lower left side of the body.—E. J. HOFFSCHMIDT





# MAUSER HSc POCKET PISTOL

By E. J. Hoffschmidt

**I**N 1934 Mauser modified their Model 1910 pocket pistol to spur its sale. But this was not good enough—the gun could not compete with the new Walther double-action pistol series. So Mauser developed their own double-

action pocket pistol, the HSc.

The HSc is a far cry from the early intricate and carefully machined military models. Internal parts were stamped out wherever possible, and music wire springs replaced expensive

machined types. The result was a simple rugged pistol, well suited for mass production and salable at a competitive price.

The HSc is a natural pocket pistol with no sharp edges to hang up in the pocket. The gun has an excellent grip and a fairly good double-action trigger pull. The design has one drawback for a person with a large hand. If the gun is gripped and fired hurriedly, there is a possibility of the hammer catching some of the skin between the thumb and forefinger as it is forced back to full cock position. Aside from this, the gun reflects the design skill that has made the Mauser name famous. Many of the operating parts perform 2 or more functions. For instance, the simple stamped bar pinned to the frame acts as magazine safety, slide hold-open device, and ejector. Another part, the cartridge feed cam, positions the incoming round, puts tension on the sear spring, and also acts as a retainer for the hammer hinge pin. Such clever designing kept the number of parts to a minimum without loss of efficiency.

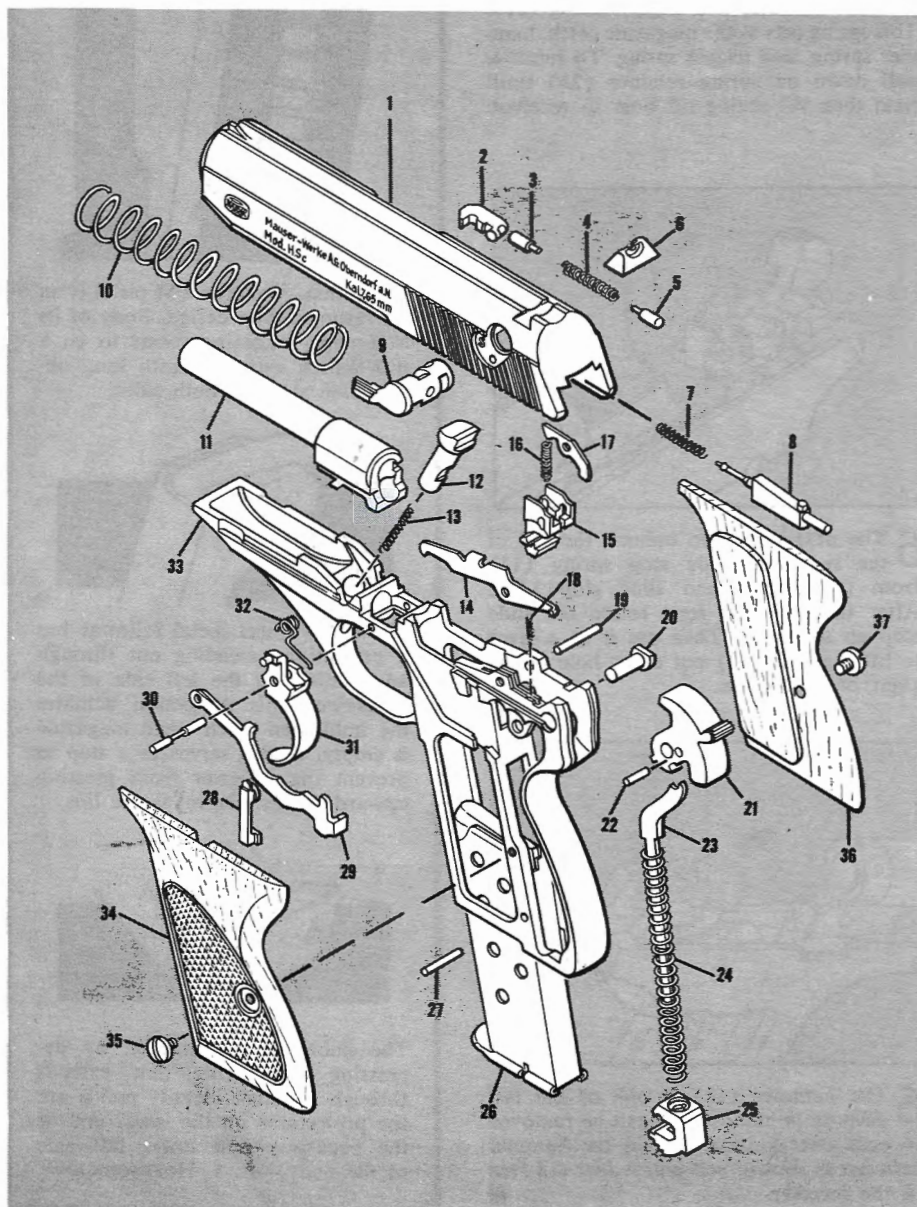
## Slide release

The slide release system is a carry-over from the old Model 1910 pocket pistol. When the last shot is fired, the slide stays open. It can be closed only by partially withdrawing the magazine and pushing it back into place again. If a loaded magazine is inserted with the slide held open, the slide will automatically run forward and chamber the first round in the magazine.

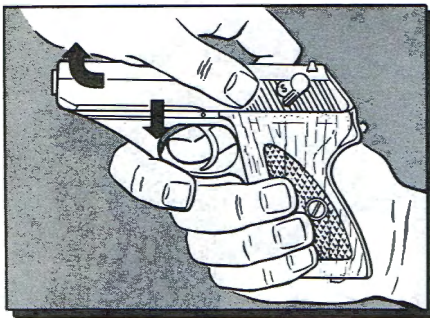
Another clever feature is the operation of the safety. When applied, it lifts and locks the tail of the firing pin into the top of the slide.

Commercial HSc pistols are well made and finished. Wartime production specimens for military use function reliably, but lack the fine prewar finish that made Mauser products world renowned.

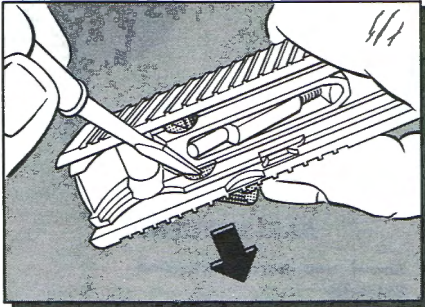
*E. J. HOFFSCHMIDT, an artist-illustrator, has long been a student of firearms.*







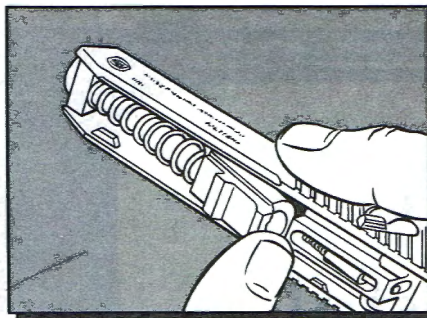
**1** To take down the HSc, remove magazine and clear chamber. Pull hammer back to full cock and put safety catch down over red dot. Hold down notched catch inside front of trigger guard. At same time pull slide forward and upward until it is free of frame



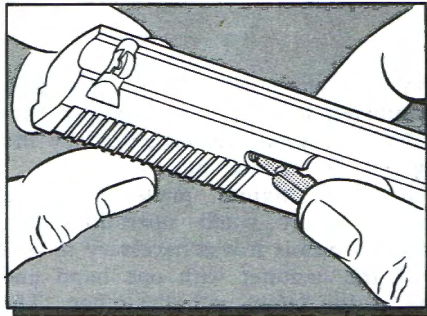
**3** The safety catch (9) is held in place by a detent (5) and spring (4) that also actuate extractor. To remove firing pin (8) or safety catch, lift end of firing pin to position shown. Turn safety to a position half-way between 'on' and 'off' positions and push safety out with a screwdriver as shown. Remove extractor and detent parts

### Parts Legend

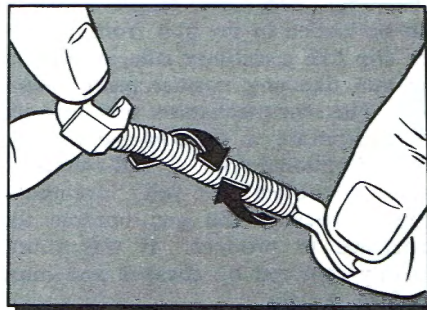
1. Slide
2. Extractor
3. Extractor plunger
4. Extractor spring
5. Safety detent plunger
6. Rear sight
7. Firing pin spring
8. Firing pin
9. Safety catch
10. Recoil spring
11. Barrel
12. Takedown latch
13. Takedown latch spring
14. Magazine safety
15. Sear
16. Sear spring
17. Cartridge feed cam
18. Magazine safety spring
19. Sear hinge pin
20. Hammer hinge pin
21. Hammer
22. Strut pin
23. Hammer strut
24. Hammer spring
25. Magazine catch
26. Magazine
27. Magazine catch pin
28. Disconnecter
29. Trigger bar
30. Trigger pin
31. Trigger
32. Trigger spring
33. Frame
34. Left grip
35. Grip screw
36. Right grip
37. Grip screw



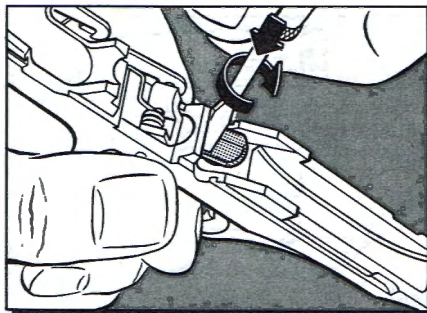
**2** To remove barrel, hold slide as shown. Push chamber end of barrel forward and upward until it clears bolt face. If barrel is held too tightly in slide, use a block of wood or magazine floorplate to lever it out



**4** To replace safety catch, back firing pin (8) and spring (7) into slide. Lift firing pin tail as in disassembly. Install safety and push firing pin down into place. Replace detent part and push extractor in and back until it seats itself properly in slide

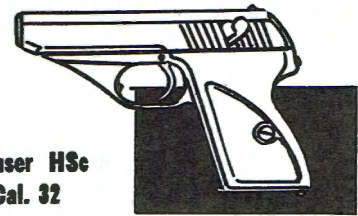


**5** When magazine catch pin (27) is removed, magazine catch (25), hammer strut (23), and spring (24) come out as an assembly. This assembly can be taken apart by giving magazine catch a quarter turn. Great care must be taken when assembling or disassembling these pieces since they are under heavy spring tension



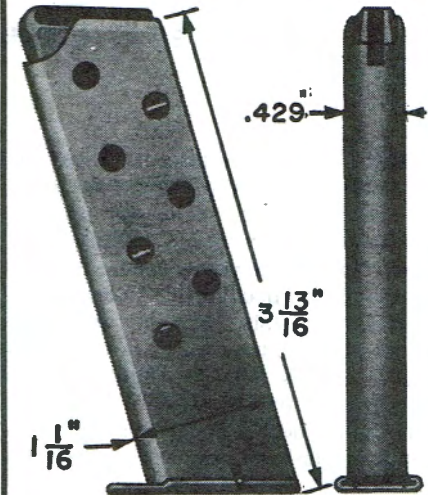
**6** To remove takedown latch (12), hold frame as shown. Use a screwdriver or block of wood to push down latch and rotate it clockwise 180°. Care must be taken to prevent latch from flying out since it is under heavy spring tension

Mauser HSc  
Cal. 32

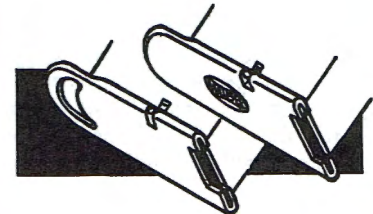


## PISTOL MAGAZINES

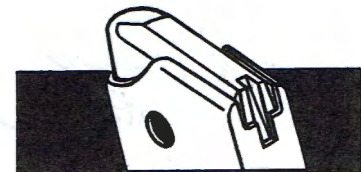
One of a series



The Mauser HSc cal. .32 double-action pistol saw wide service during World War II and was carried by many German officers. It was first manufactured in the early 1930's, and production continued through World War II. Prewar guns can be recognized by their fine finish and the Mauser trademark on the magazine. Wartime guns usually lack the fine finish, but are still among the best pocket pistols yet designed.



There are 2 common varieties of floorplates: the flat prewar with Mauser trademark and the wartime with a depression on the front edge. Floorplates with finger extensions are uncommon. The cutout on the floorplate allows the magazine catch to hold on the backstrap and not exert pressure on the floorplate.

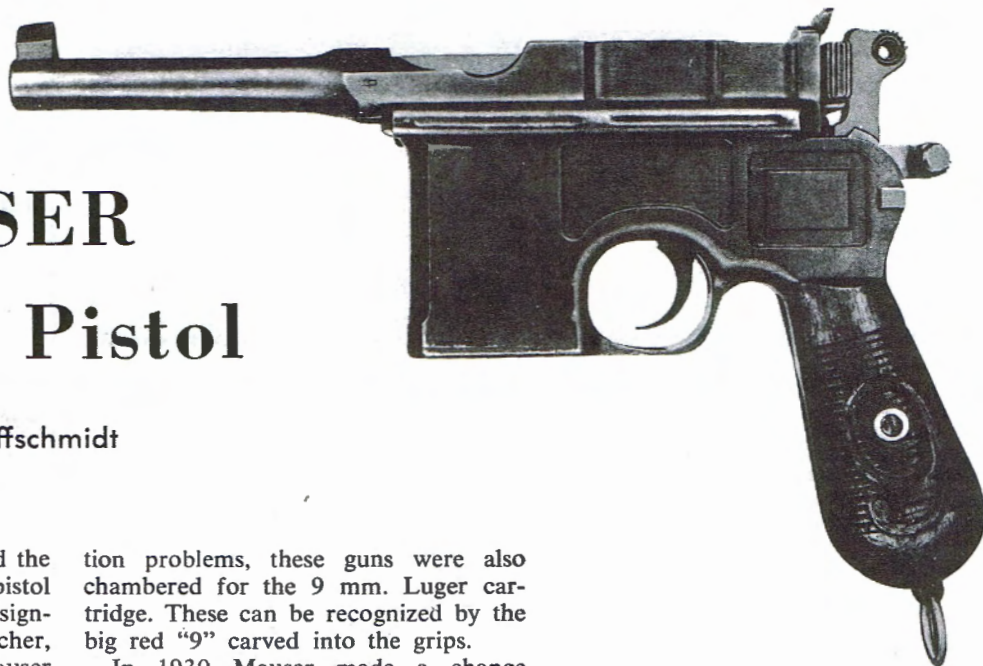


Mauser HSc magazines have the carefully machined follower that has given them a reputation for reliability. The long cut down the back of the follower and magazine backstrap is another point of identification. — E. J. HOFFSCHMIDT



# MAUSER Military Pistol

By E. J. Hoffschmidt



**T**HE 1890's can rightly be called the beginning of the automatic pistol era. During these years, gun designers such as Borchardt, Mannlicher, Schwarzlose, Browning, and Mauser focused their mechanical ingenuity on self-loading pistols. Probably the most remarkable of these early designs was Paul Mauser's Model 1896 Military Pistol. Few handguns can match its remarkable success and world-wide distribution. This unique design contains no pins and only one screw, the grip screw. All internal parts that require a pin or pivot are machined from solid stock so the pin is integral with the part.

During the half century that the gun was in production, several models were offered. These range from the odd 6-shot pistol to the selective-fire Model 712. Although never officially adopted by the German Army, Mauser pistols were widely carried by German officers during World War I, and to a limited degree in World War II. The World War I pistol is the most common; it has a 5½" barrel and is chambered for the 7.63 mm. Mauser cartridge. To simplify wartime ammuni-

tion problems, these guns were also chambered for the 9 mm. Luger cartridge. These can be recognized by the big red "9" carved into the grips.

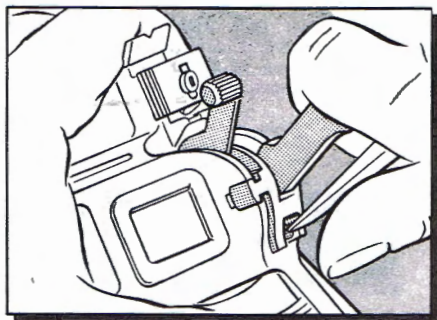
In 1930 Mauser made a change in the safety catch operation. On previous pistols it was necessary to pull back the hammer with one hand and engage the safety with the other. The new universal safety of 1930 made it possible to apply the safety with the gun hand only. The only other major change came when Mauser dropped the rifle-style magazine and changed to a removable sheet-metal magazine which can be loaded in the gun from a stripper clip like a military rifle, or outside the gun like any normal pistol magazine. The sear mechanism was changed to incorporate a selector switch that allowed optional semi- or full-automatic fire. Manufacture was eventually stopped because the gun became too expensive to produce. It was subsequently replaced by cheaper and more modern designs.

Mauser military pistols were widely copied in Spain and China. Some are excellent copies and operate reliably. Others reflect only the distinctive Mauser outline with lock mechanism differing from the original.

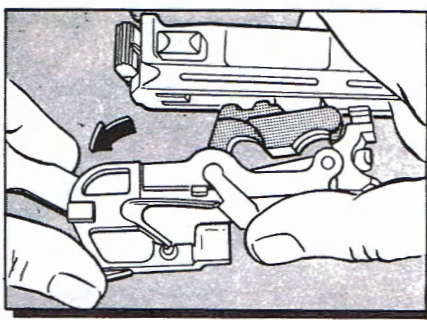
## PARTS LEGEND

1. Barrel and barrel extension
2. Extractor
3. Bolt
4. Bolt stop
5. Firing pin spring
6. Firing pin
7. Recoil spring
8. Trigger spring
9. Magazine plunger
10. Trigger
11. Rocker plunger
12. Mainspring
13. Mainspring plunger
14. Bolt locking block
15. Sear arm
16. Sear
17. Sear spring and hammer pivot
18. Hammer
19. Lock mechanism frame
20. Lock frame stop
21. Safety
22. Rocker coupling
23. Receiver
24. Lanyard ring
25. Left-hand grip
26. Grip screw
27. Follower spring
28. Follower
29. Magazine floorplate

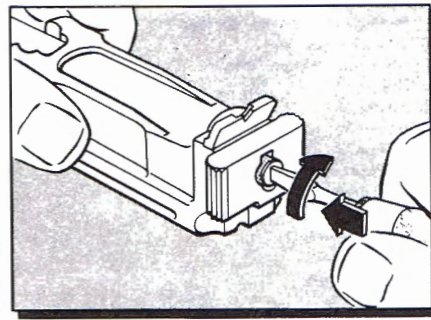
E. J. HOFFSCHMIDT is an artist-illustrator.



**1** With point of a bullet, press up magazine plunger (9) and slide floorplate (29) forward. Remove follower (28) and spring (27). Then cock hammer. Press up lock frame stop (20) as shown. Pull barrel extension assembly (1) off rear of receiver (23)

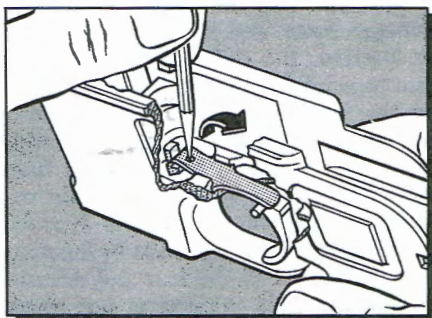
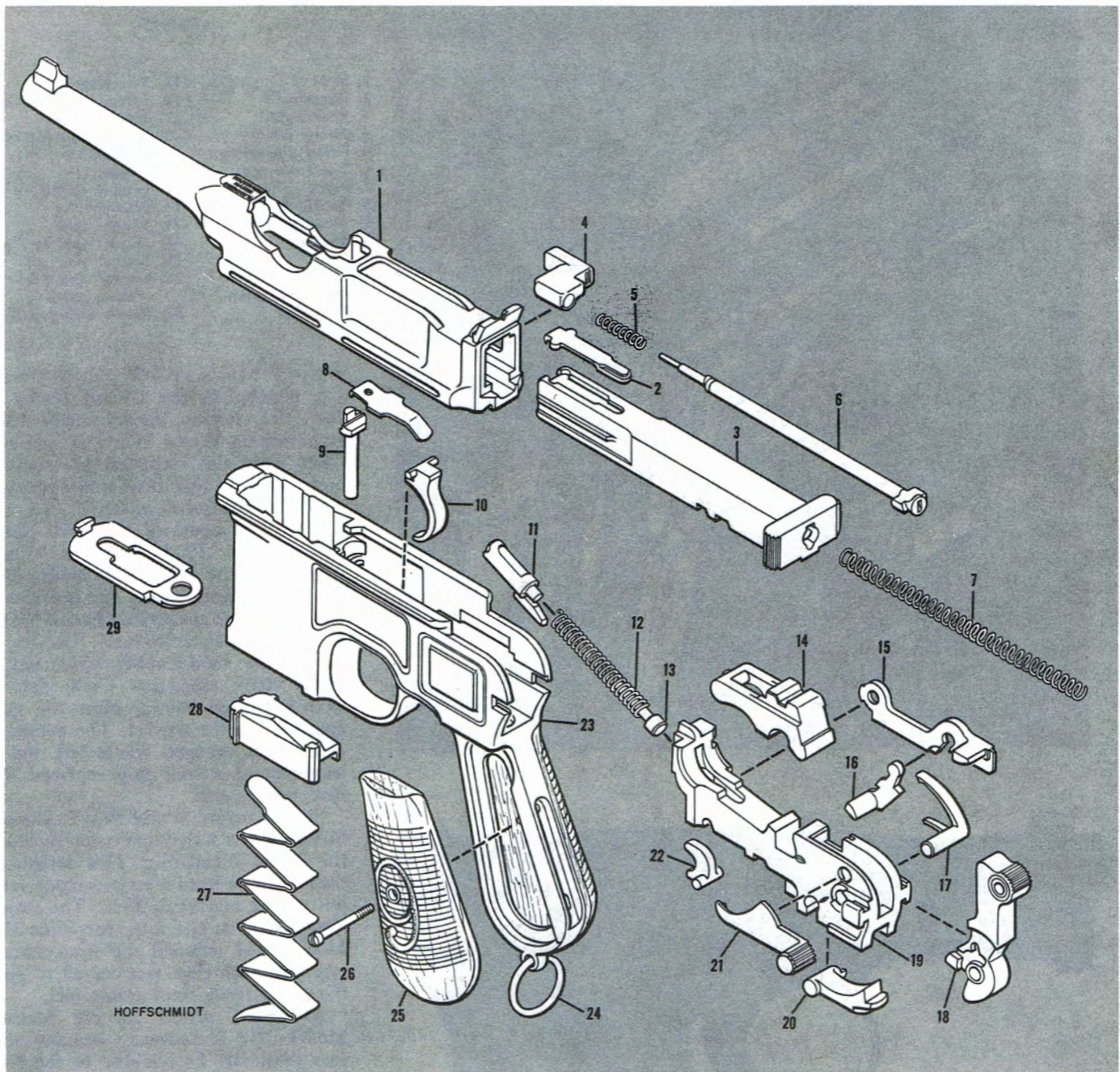


**2** After barrel extension assembly is free of frame, pull down on rear of lock mechanism frame (19) to free it from barrel extension. Remove locking block (14). Handle lock work carefully to prevent frame stop (20) and sear (16) dropping out of place

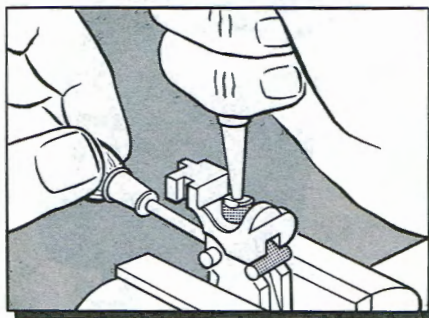


**3** To remove firing pin (6), use a small screwdriver to push in firing pin as far as it will go and give it a ¼-turn clockwise. Remove pin and push bolt stop (4) forward and out to right. Recoil spring (7) can now be removed

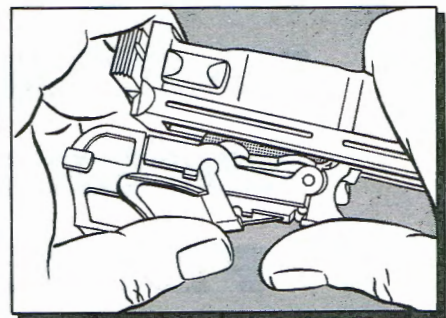




**4** To remove trigger (10) and magazine plunger (9), trigger spring (8) must be removed first. To do this, use a tool with a small hook to lift spring free of plunger (9). At same time, push it toward butt until free



**5** Care must be taken when removing rocker coupling (22) since it is under heavy spring tension. First lower hammer. Hold lock mechanism in a vise and press down on plunger (11). At same time push rocker coupling (22) through as shown

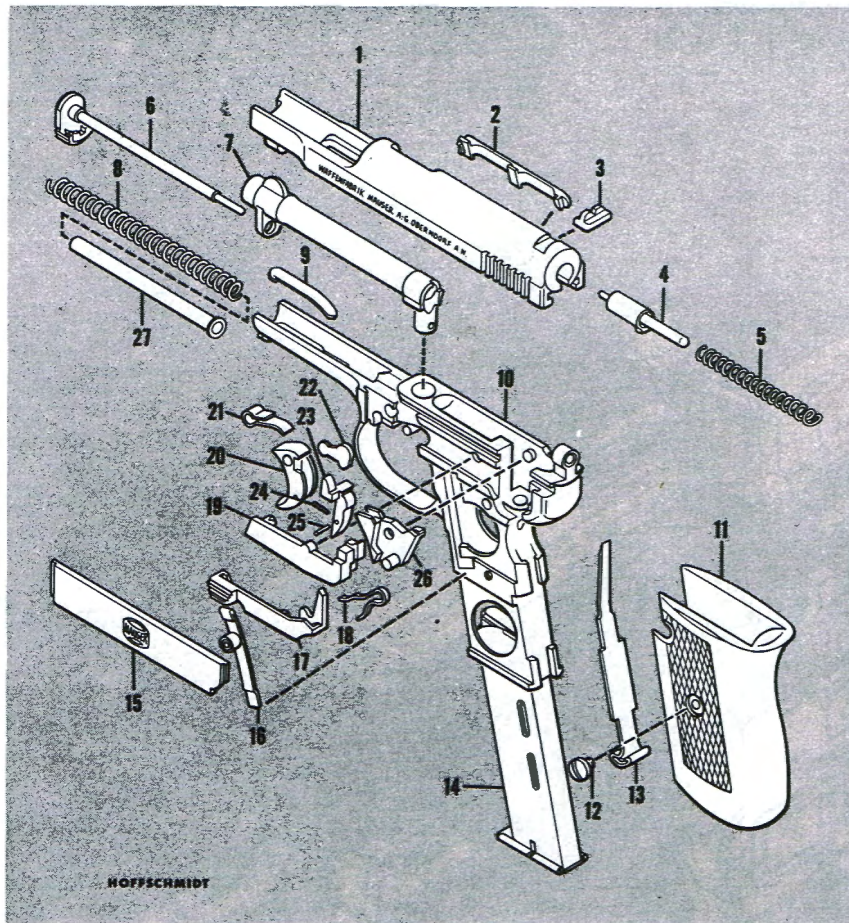


**6** To reassemble gun, install bolt (3) and firing pin, etc. Turn barrel extension upside down and drop locking block (14) over its projection. Cock hammer and press down on forward end of lock mechanism until the tail of locking block (14) snaps into rocker coupling (22)



# LEGEND

- |                       |                                 |
|-----------------------|---------------------------------|
| 1. Slide              | 15. Side-plate                  |
| 2. Extractor          | 16. Safety catch release        |
| 3. Rear sight         | 17. Safety catch                |
| 4. Firing pin         | 18. Trigger bar spring          |
| 5. Firing pin spring  | 19. Trigger bar                 |
| 6. Takedown rod       | 20. Trigger                     |
| 7. Barrel             | 21. Trigger spring              |
| 8. Recoil spring      | 22. Disconnecter                |
| 9. Takedown rod catch | 23. Trigger sear                |
| 10. Receiver          | 24. Trigger sear spring         |
| 11. Grip              | 25. Trigger sear pin            |
| 12. Grip screw        | 26. Ejector and hold-open catch |
| 13. Magazine catch    | 27. Recoil spring guide         |
| 14. Magazine          |                                 |



THIS Mauser pistol was extremely popular in the United States in the '20's, having been brought back by returning World War I doughboys. They were also imported in quantity and sold for less than contemporary American automatic pistols.

The first model of the 1910 pistol was made in .25 ACP caliber. While larger than the average .25 caliber pistol, its excellent design and workmanship, and large magazine capacity made it an immediate success. The early model had hard rubber grips and a rather weak extractor. These defects were corrected shortly after the gun appeared on the market. The extractor design was changed completely and a wrap-around walnut grip replaced the hard rubber grip.

Shortly before World War I, Mauser brought out a scaled-up version to shoot the .32 ACP cartridge. This design remained static until a revised model was put on the market in 1934. The major change was in the grip, for while the Model 1934 retained the wrap-around grip, the back edge was curved to give the gun a more comfortable feel.

As pocket pistols go, the Mauser Model 1910 is unusually accurate and easy to shoot. This is due to the fact that it sits low in the hand and has a grip ample enough for the average hand. When the last shot is fired, the slide remains open, and if a loaded magazine is inserted, the slide will automatically run forward and chamber the first round in the magazine. To close the slide on an empty magazine, first pull the clip out about 1/2 inch, then push it home again. This will release the slide stop and the slide will fly forward. It is also possible to release the slide by snapping it a bit further to the rear and releasing it quickly. This method is not recommended, and should be used only when a magazine is not available. It will not work every time, and causes excessive wear on the hold-open mechanism.

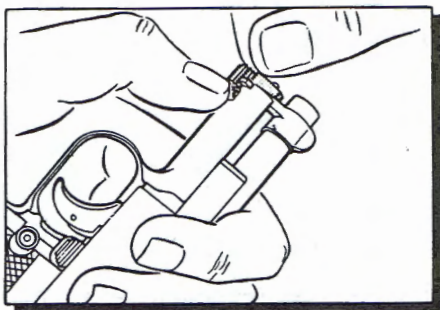
The gun contains some interesting features. For instance, when the firing pin is cocked, the end of it protrudes



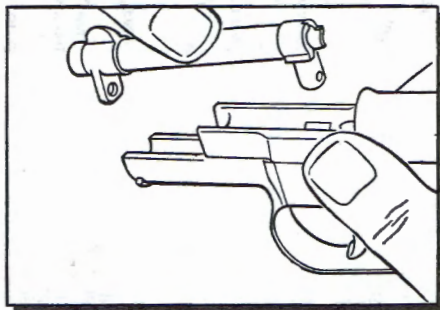
## MAUSER POCKET PISTOL 1910

By E. J. Hoffschmidt

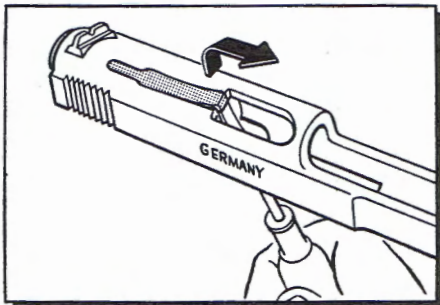




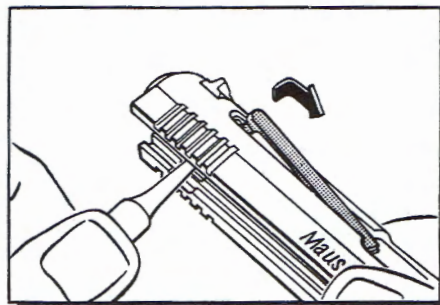
**1** To field strip the gun, first remove the magazine and pull back the slide until it stays open. Depress the protruding portion of the takedown rod catch (9) and turn the takedown rod (6) until it is free of the lug on the receiver



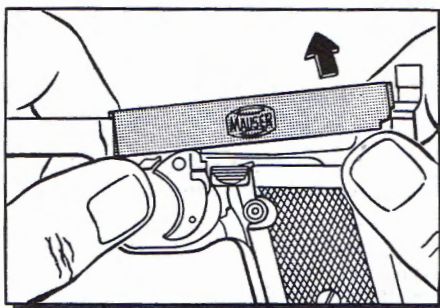
**2** Withdraw the takedown rod (6) from the receiver (10). The barrel (7) can now be lifted out of its seat in the receiver. Replace the magazine and ease the slide (1) off the front of the receiver. Pull the trigger while easing the slide off to release the firing pin spring



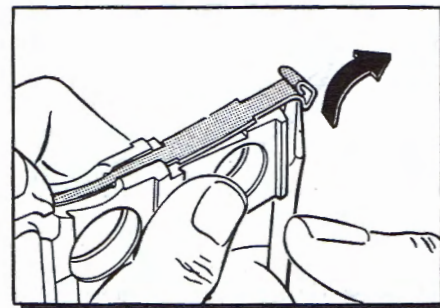
**3** There are two types of extractors. The early type shown narrows down a short distance from its tail. This tail fits into a T-slot in the slide. Use a small screwdriver to lift the projection on the front end of the extractor free of the slide before attempting to pry it forward as shown



**4** The later type extractor can be recognized by its straight outline and by the hole in the underside of the slide. The tail of the extractor must be pushed out of this hole with a thin punch and then pushed forward as shown



**5** To observe the operating parts, the side-plate (15) can be pushed up and out of its grooves in the receiver. To remove the operating parts, it is necessary to remove the grip (11). Do this carefully to prevent the safety catch parts (16), (17), (18) jumping out when they are free of the grip



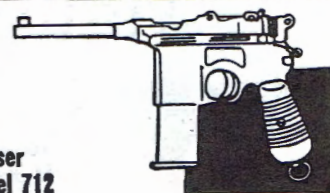
**6** When the side-plate (15) and grip (11) have been removed, all the operating parts can be easily removed except the hold-open catch (26). The hold-open catch can be removed after the magazine catch (13) is removed. To remove the magazine catch, push it up clear of the receiver and pry it forward as shown

from the back of the slide. It can be easily seen in the daytime or felt in the dark. Another feature is the magazine disconnecter that prevents the gun firing when the magazine is not in the gun. The thumb safety has a rather novel method of operation that locks the slide closed and also prevents it being accidentally released while the gun is being taken from the pocket. To engage the thumb safety simply push the thumbpiece down toward the button in the grip. To release it, press the button and the safety will snap back to

'fire' position.

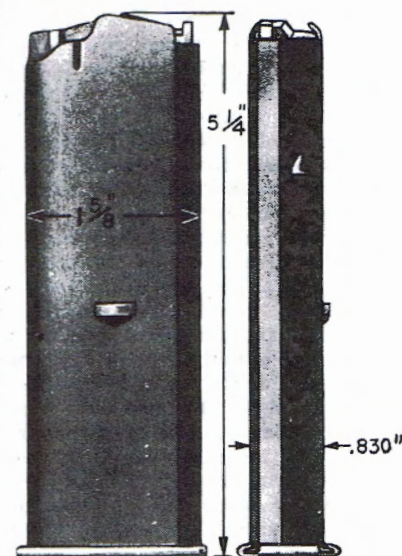
While the gun features the usual fine Mauser workmanship, its internal design leaves a bit to be desired. The flat trigger spring and trigger bar spring are the source of some trouble, since they break easily if not carefully removed. Another bad feature is the strong magazine catch spring. This spring is usually so stiff that it causes the magazine catch to score the magazine when it is inserted. It also at times causes damage to the magazine floor-plate.

**Mauser  
Model 712**

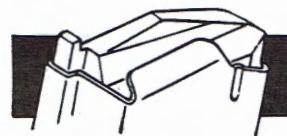


## PISTOL MAGAZINES

One of a series



The original Mauser military pistol, designed before the turn of the century, was modernized in the 1930's to utilize a box magazine. The Model 712, as the revised gun was called, was sold in America up until World War II. It is strictly a semi-automatic pistol, firing the powerful 7.63 mm. Mauser cartridge. (A full-automatic version, the Model 711, which turns up occasionally, is classed as a machine gun under the 1968 Gun Control Act.) The Model 712 is an excellent piece but extremely awkward to handle because of its long magazine hanging down in front. High production costs and the advent of more modern designs caused production to stop. The gun was offered with 10- and 20-shot magazines.



The 20-shot magazine is massive. The follower is milled from a heavy steel forging and highly polished.



The big Mauser trademark on the detachable floorplate is another point of recognition. The 10-shot magazine is of the same construction but only about half as long.—EDWARD J. HOFFSCHMIDT



# Mauser W.T.P. Old Model



By E. J. Hoffschmidt

**I**N the 1920's all major German gun companies and many minor ones turned out vest-pocket pistols. Mauser brought out their W.T.P. or Westen-Taschen-Pistole (vest-pocket pistol), but it was not the most popular. The average German shopping for a vest-pocket gun usually chose the smallest and least expensive. Mauser was neither.

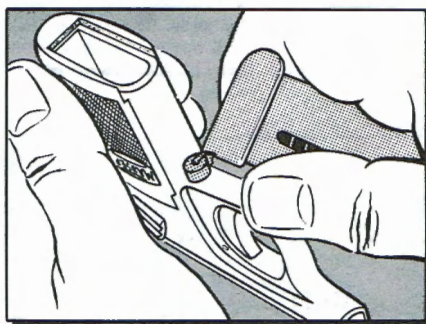
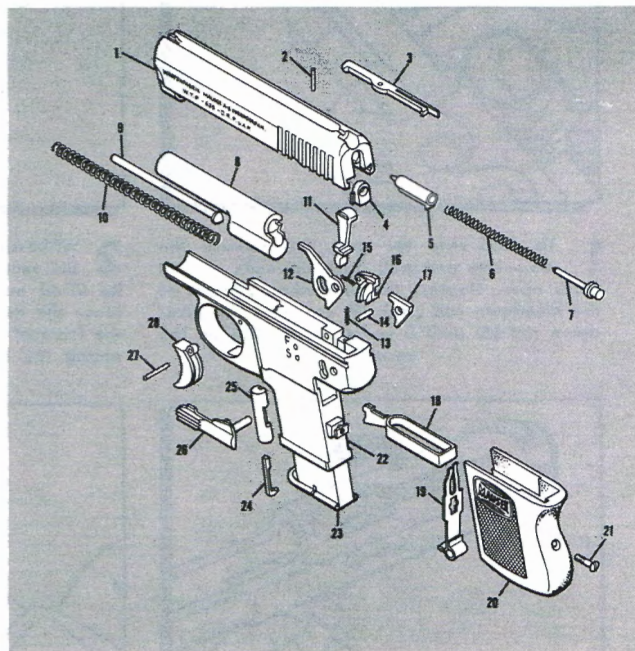
The W.T.P. is well made and finished. While not the smallest of its type, it is very compact. The grip is comfortable, and the safety catch is convenient and locks both sear and slide. Frame grip section is square and a thick hard rubber grip is used to fill out the area to a comfortable shape. This made the frame easier to machine but also made the grip susceptible to breakage. When the new model was introduced in 1938, the frame was forged to proper contour and conventional flat grips were screwed to the sides.

The W.T.P. has a magazine safety that prevents the gun from being fired with magazine removed. The firing pin spring guide projecting from the back of the slide locks the firing pin retainer and serves as a cocking indicator. It cannot be pressed inward when the gun is cocked.

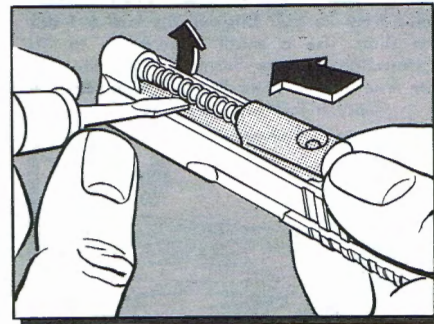
When the last shot has been fired, the slide is held open by the magazine follower. When the magazine is removed, the slide snaps closed. The magazine must be removed against recoil spring tension. While the old model is a reliable gun, the new model that replaced it is a far better design.

## Parts Legend

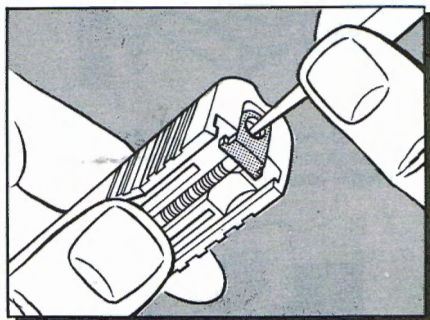
1. Slide
2. Extractor pin
3. Extractor
4. Firing pin retainer
5. Firing pin
6. Firing pin spring
7. Firing pin spring guide
8. Barrel
9. Recoil spring guide rod
10. Recoil spring
11. Disconnecter
12. Magazine disconnecter
13. Disconnecter spring
14. Sear pin
15. Sear spring
16. Sear
17. Trigger lever
18. Trigger bar
19. Magazine catch
20. Grip
21. Grip screw
22. Frame
23. Magazine
24. Takedown catch spring
25. Takedown catch
26. Safety catch
27. Trigger pin
28. Trigger



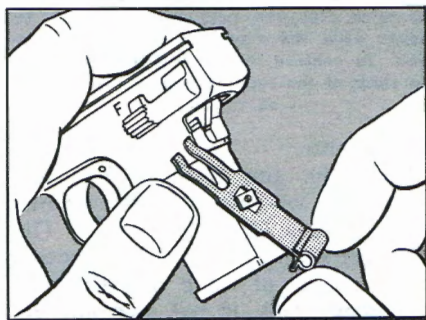
**1** The takedown catch (25) runs through frame and locks barrel to frame. To strip gun, simply push in and down on takedown catch spring (24). This will disengage barrel and allow barrel and slide to be stripped off front of frame



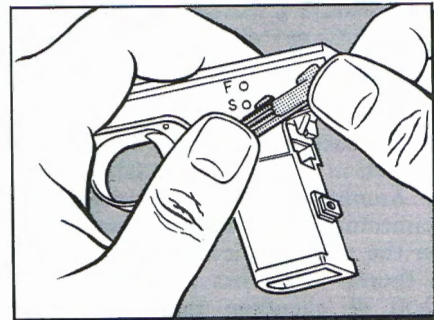
**2** To remove barrel (8) and recoil spring (10) from slide, push barrel forward and upward. Ease it out of slide since it is under spring tension. When reassembling barrel and recoil spring, it may be necessary to lift spring and recoil spring guide rod (9) as shown to help align the rod



**3** To remove firing pin (5), push firing pin spring guide (7) in with a punch. When it is clear of the firing pin retainer (4), push the retainer down as shown and ease out firing pin spring, and spring guide



**4** After grip (20) has been removed, the combination magazine catch (19) must be removed to expose sear parts. To do this rotate the spring 90° until square cutout on spring lines up with lug on frame, and lift off spring



**5** When safety catch (26) is removed it frees sear parts. To remove safety, it is necessary to first remove the grip. Safety can then be pushed down lower until it snaps free of frame. To reassemble, push it in until it is flat against frame, then push it up toward 'fire' position



# NAMBU

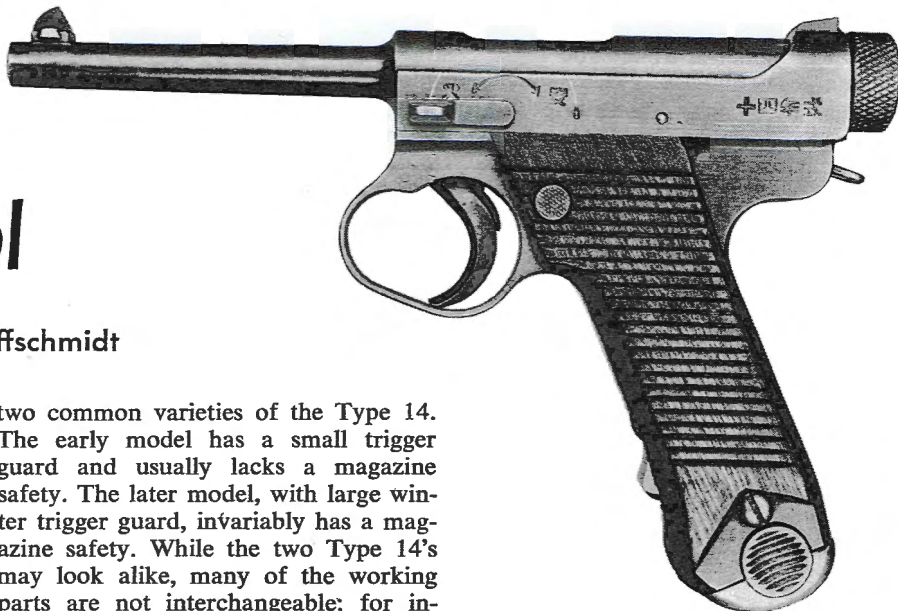
## Type 14 Pistol

By E. J. Hoffschmidt

**S** EVEN years before we adopted the Model 1911 Colt Automatic, the Japanese high command issued a directive permitting Japanese officers to purchase and carry the Nambu pistol. While Col. Kijiro Nambu's pistol physically resembled the Luger pistol, it was an original design and not a direct copy of an existing arm. This early model, with its characteristic offset recoil spring and front-operated grip safety, was eventually modified.

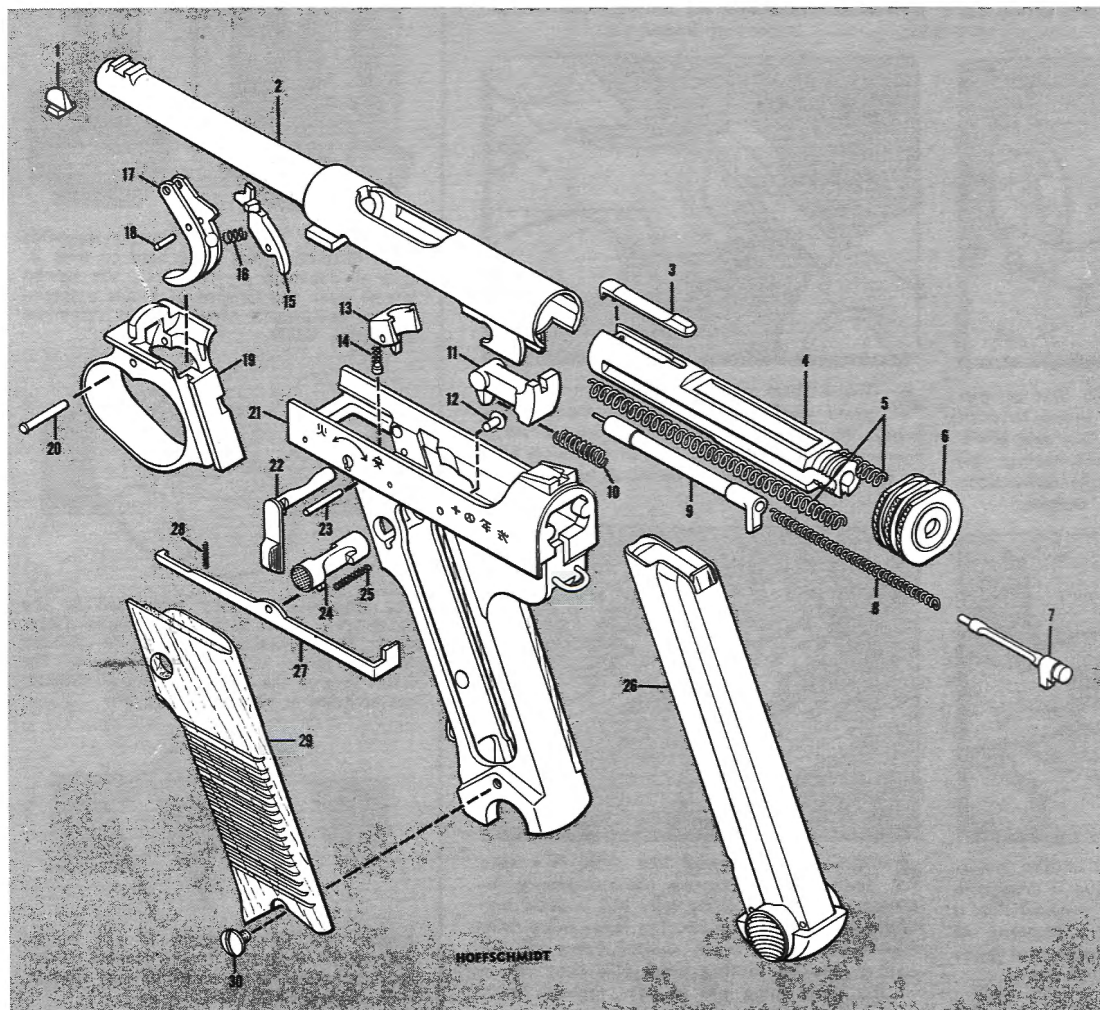
The revised design, known as the Type 14 (1925), is far more common, for it was widely used by the Japanese during World War II and by Chinese Communist troops in Korea. There are

two common varieties of the Type 14. The early model has a small trigger guard and usually lacks a magazine safety. The later model, with large winter trigger guard, invariably has a magazine safety. While the two Type 14's may look alike, many of the working parts are not interchangeable; for instance, the breech bolt on the early model is machined to take a long firing pin that stops short of the bolt lock, while the large trigger guard model has a short firing pin that passes through a notch in the bolt lock. Many round type trigger guards do not have the cutouts in the back strap or trigger projection necessary to operate in a frame



equipped with a magazine safety.

Since the winter trigger guard version seems to be the most common, we will take a closer look at it. The Type 14 Nambu is a locked breech, recoil-operated pistol. It fires an 8 mm. bottleneck cartridge that looks a great deal like the .30 Luger cartridge but has a larger base. This cartridge, which fires a jack-



### PARTS LEGEND

- 1 Front sight
- 2 Barrel and barrel extension
- 3 Extractor
- 4 Bolt
- 5 Recoil springs
- 6 Cocking piece
- 7 Firing pin extension
- 8 Firing pin spring
- 9 Firing pin
- 10 Locking block spring
- 11 Locking block
- 12 Trigger bar hinge pin
- 13 Magazine safety
- 14 Magazine safety spring and plunger
- 15 Trigger sear
- 16 Sear spring
- 17 Trigger
- 18 Trigger sear pin
- 19 Trigger guard
- 20 Trigger hinge pin
- 21 Receiver (frame)
- 22 Safety catch
- 23 Magazine safety hinge pin
- 24 Magazine catch
- 25 Magazine catch spring
- 26 Magazine
- 27 Trigger bar
- 28 Trigger bar spring
- 29 Left grip
- 30 Grip screw



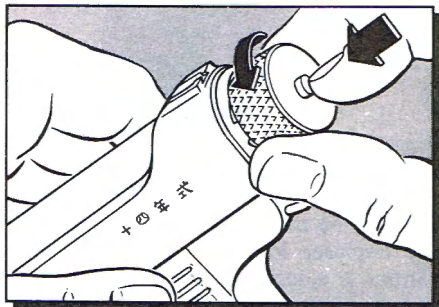
eted 102-gr. bullet at about 900 f.p.s., is not too powerful.

Because of its well-shaped grip and excellent balance, the Type 14 points far more naturally than most military automatic pistols. These features, plus the mild recoil, make the gun pleasant to shoot.

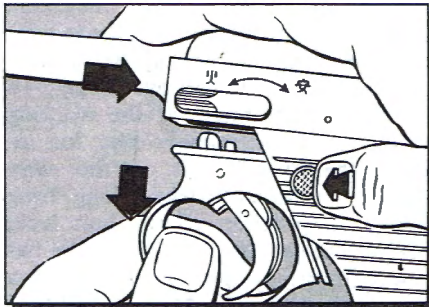
The Type 14 has several bad features. First is the awkward operation and position of the safety catch, which cannot be operated with the shooting hand. Second, the magazine follower holds the breech open, which makes magazine removal difficult. The magazine of the

large trigger guard model is even more difficult to remove because of a friction spring in the front strap. This device was furnished to prevent the magazine from dropping out if the magazine catch was accidentally released. The worst feature of the gun is the fact that it can be assembled without the locking block. If the gun were fired in this condition, it might injure the shooter and damage the gun.

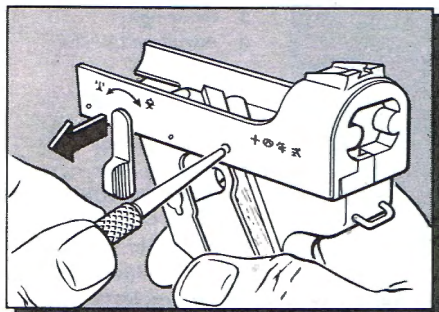
Quality of workmanship varies a great deal. Prewar guns were well made and finished, but wartime production guns are usually poorly finished. —■



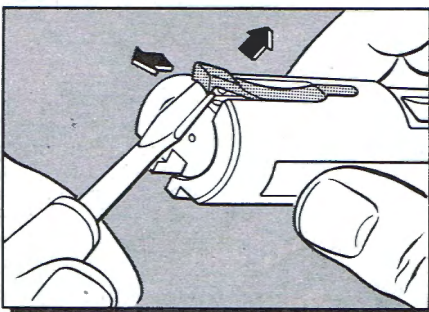
- 1** To field strip gun, first remove magazine. Then pull back bolt to clear chamber, but not enough to cock weapon. Ease bolt forward. Press in firing pin extension (7) protruding through cocking piece (6) and unscrew cocking piece. Shake out firing pin spring (8)



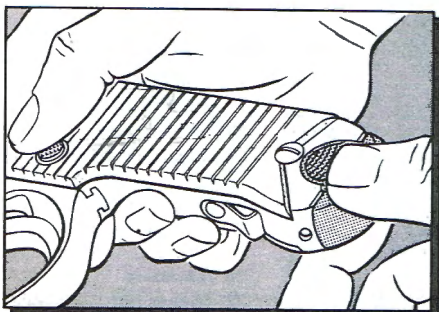
- 2** Rotate safety catch (22) to fire position as shown. Press magazine catch (24) in as far as it will go. Hold back barrel extension (2) or press muzzle against a solid surface. Pull down hard on trigger guard (19) until it is free of frame and lift barrel extension (2) out of frame



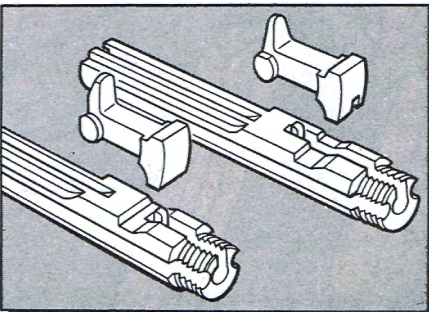
- 3** To remove safety catch (22) first remove left grip (29). Use a small punch to push out trigger bar hinge pin (12). This will allow trigger bar (27) and trigger bar spring (28) to drop out. Rotate safety catch to down position and pull it out of frame



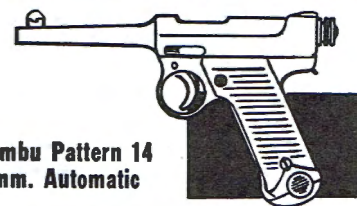
- 4** The method of retaining the extractor is a great deal like that of the Model 1900 Luger. To remove extractor (3), use a small screwdriver to push front free of retaining hole in bolt (4), then pry it forward, out of bolt



- 5** On early Type 14 pistols a loaded magazine will drop out of the gun if magazine catch is accidentally pushed. To prevent this, a friction spring was riveted to front strap of grip. This spring bears on magazine and holds it until deliberately pulled out



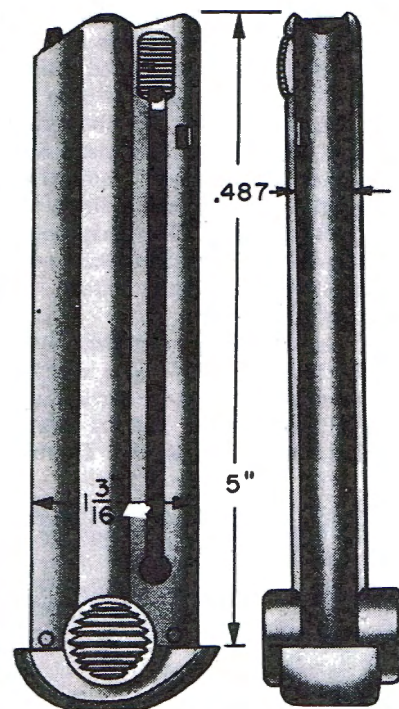
- 6** Although early and late Type 14's may look alike, parts are not necessarily interchangeable. The early type has a solid bolt lock and a long firing pin. The later, more common type, has a much shorter firing pin (9) and a grooved locking block (11) that allows the short firing pin to pass through it



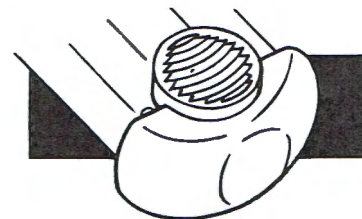
Nambu Pattern 14  
8 mm. Automatic

## PISTOL MAGAZINES

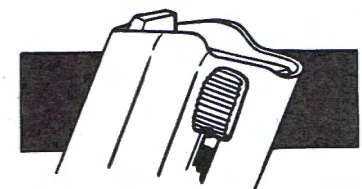
One of a series



The Pattern 14 (1925) Nambu magazine is so distinctive that it is hard to miss it. Like all Japanese pre-war guns, the Nambu is well made and finished. It shoots a special 8 mm. bottle-neck cartridge that resembles a .30 cal. Luger.



The magazine is easily recognized by the heavy cast base with the serrated finger grips. This magazine should not be confused with the Model 1914 Nambu magazine. The finger grip on the 1914 magazine is checked, not serrated as on the Pattern 14.



Another distinctive feature of the Nambu Pattern 14 magazine is the loading button that depresses the follower for easy loading.  
—E. J. HOFFSCHMIDT





# Ortgies Pocket Pistol

By E. J. Hoffschmidt

ORTGIES pistols are among the most common of the early German pocket pistols. They were extremely popular in Germany and central Europe in the 1920's-30's and large numbers were exported to the Americas during this period.

Heinrich Ortgies set up shop during 1919 in Erfurt, Germany. His guns, produced within the framework of the Versailles Treaty, were not classified as military weapons. The cal. .32 model was well received because of its compact design and low price. In 1920, the Deutsche Werke of Erfurt took over the production of the Ortgies. The cal. .32 pistol was followed by the smaller scale cal. .25 model. Around 1922 they brought out the cal. .380. At this point the design changed a bit and many of the .380 (9 mm. short) Ortgies will be found with an additional thumb-operated safety catch. Somewhere, around 1926, production ceased.

Although the design contains 4 hinge pins, there is not a screw in the gun. The grips are retained by a clever spring-loaded catch. The barrel is rigidly fixed to the frame but can be easily removed for cleaning or replacement. It is interesting to note that the Ortgies does not have a fixed ejector. After the extractor has pulled the case from the chamber, the firing pin protrudes through the bolt face to eject it.

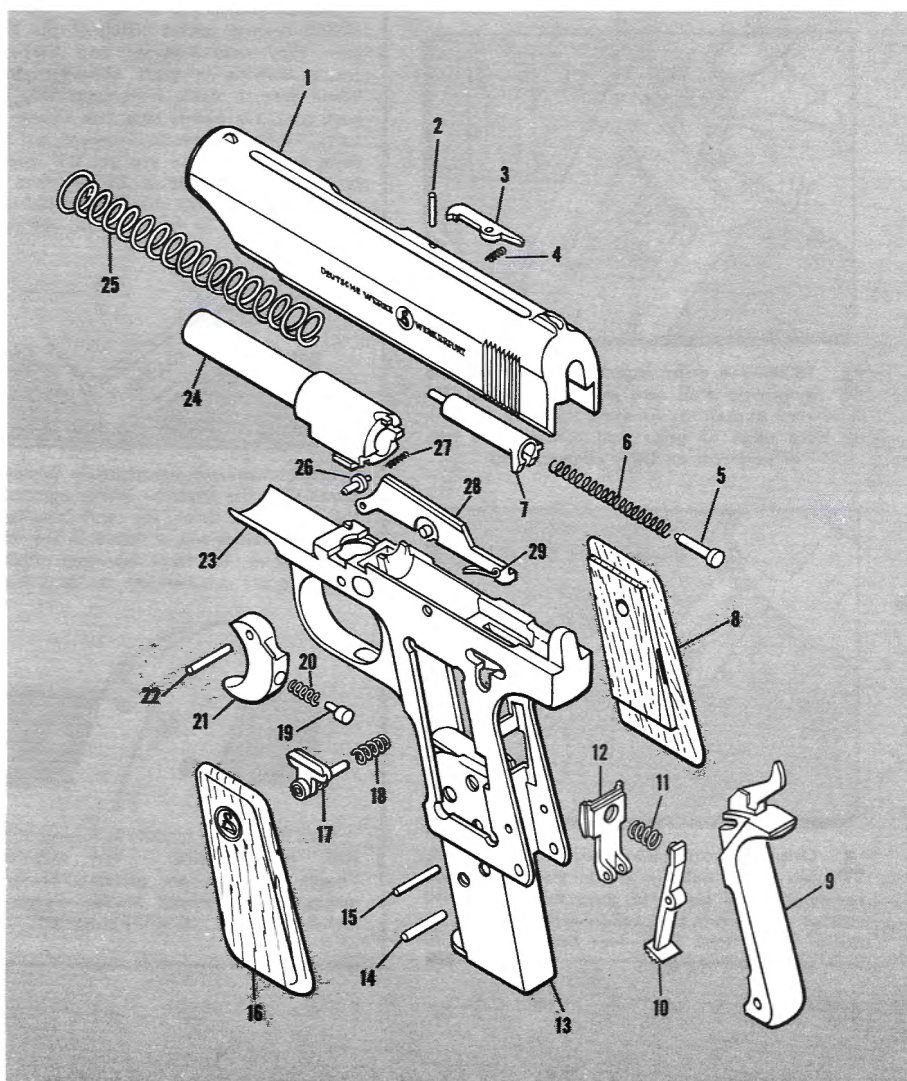
The cal. .25, cal. .32, and some models of the .380 have only one safety catch. This safety is of the squeeze type and protrudes only when the firing pin is cocked. Although the disconnecter design is very clever it subjects the end of the disconnecter to appreciable wear.

Due to the simple blowback action, takedown procedure is easy and uncluttered. The gun can be reassembled just as easily once the trick of restraining the firing pin assembly is known.

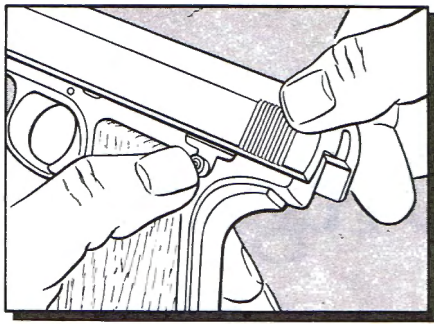
E. J. HOFFSCHMIDT is an artist-illustrator and amateur gunsmith

## Parts Legend

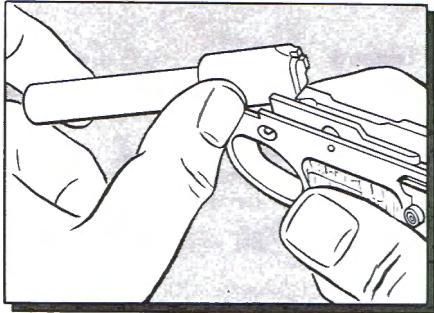
- |                            |                                       |
|----------------------------|---------------------------------------|
| 1. Slide                   | 15. Magazine and grip latch hinge pin |
| 2. Extractor pin           | 16. Left grip                         |
| 3. Extractor               | 17. Takedown catch                    |
| 4. Extractor spring        | 18. Takedown catch spring             |
| 5. Firing pin spring guide | 19. Trigger spring plunger            |
| 6. Firing pin spring       | 20. Trigger spring                    |
| 7. Firing pin              | 21. Trigger                           |
| 8. Right grip              | 22. Trigger pin                       |
| 9. Grip safety             | 23. Frame                             |
| 10. Magazine catch         | 24. Barrel                            |
| 11. Magazine catch spring  | 25. Recoil spring                     |
| 12. Grip latch             | 26. Disconnecter                      |
| 13. Magazine               | 27. Disconnecter spring               |
| 14. Grip safety hinge pin  | 28. Sear                              |
|                            | 29. Sear spring                       |



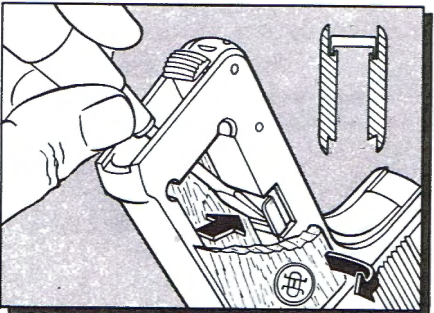




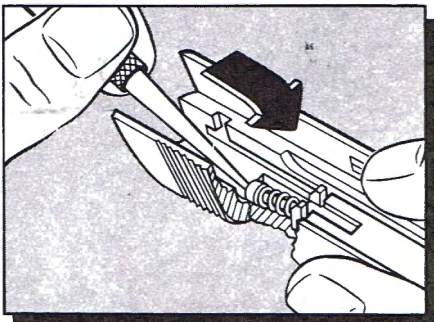
**1** Remove magazine (13). Pull slide (1) back until slide serrations line up approximately with end of frame as shown. Push in takedown catch (17) and lift end of slide free of frame. Push slide forward off barrel



**2** To remove barrel (24) for cleaning or repair, grasp barrel (24) and frame (23) as shown. Twist barrel counterclockwise until it is at right angles to frame and lift up

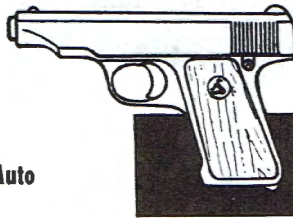


**3** To remove grips, insert a screwdriver into magazine well and push grip latch (12) in toward backstrap. At same time pry or push up back edge of grips and rotate them free of undercut on front edge of grip



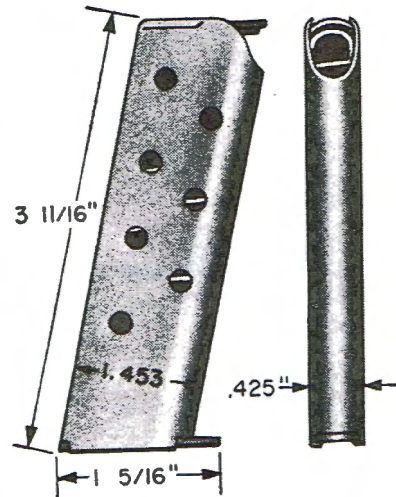
**4** Ortgies reassembles easily once firing pin (7) is held in check. Push firing pin spring (6) and guide (5) into firing pin until end of guide can be pushed into its notch in top of slide. Hook slide over barrel, pull it to rear and downward

Ortgies  
.32 Cal. Auto

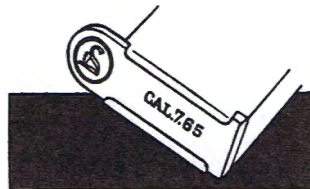


## PISTOL MAGAZINES

One of a series



Ortgies automatics are one of the commonest German pocket pistols in the Americas. They were imported into North and South America in great quantities before World War II. Aside from being very compact guns, the pistols have few notable features. Finish is generally excellent and takedown is simple—once you get the knack of it. Ortgies were made in .25, .32, and .380 cal. Only the .32 cal. magazine is illustrated here, since it is by far the most common.



Ortgies magazines are generally stamped as shown with the Deutsche Werke insignia and the caliber. At times, the same insignia and caliber markings will be found on the side of the magazine. The large tabs that retain the floorplate are another key to identification.



Even though the follower is formed of sheet steel, the magazine is very well made. Though the guns are normally blued, the magazines are almost always chrome- or nickel-plated.—E. J. HOFFSCHMIDT.

## Try It This Way

### Removing breech plug

A breech plug with an integral tang or lug that is rusted in the barrel can usually be removed with the aid of a low-melting-point alloy, such as Cerrobend, which melts in boiling water. The breech end of the barrel is placed in a small tin can and, with the barrel held vertically, the melted alloy is poured into the can to cover the tang. When the metal hardens, the barrel is held in a vise and a large pipe wrench is used on the can to unscrew the breech plug. The breech plug is then immersed with the can in boiling water to melt off the surrounding metal.—D. H. FAIRBANKS

### Finishing bolt knob

When the underside of a bolt knob is flattened, the usual procedure is to checker the flattened portion. A quicker yet satisfactory substitute for the checkering can be done by chucking the knob in the lathe and, with a pointed tool, making a series of evenly spaced rings on the flat. With a 60° pointed tool moving the cross slide .040" for each ring, and feeding in .030", a sharp V thread-like ring will result. More clearance than usual must be ground on the tool to cut the rings near the center.—HOWARD FAUST

### Welding bolt handle

When resetting bolt handle for scope use, cut off leaving about 1/2" on bolt. Tack handle in place at new angle. One man then holds bolt under water with only part to be welded above surface, and turns bolt while welder fills in and finishes job.—ED HOWSON

### SA ejector rod head

The ejector rod head as made by the Christy Gun Works of Sacramento, Calif., for the Colt Single Action Army Model is interchangeable with that of the Ruger Blackhawk, and is practically identical with the original Colt design, which gives a very adequate finger hold.—E. A. HOLLEY

### Dry firing revolver

To dry-fire my Smith & Wesson K-22 revolver without harming the firing pin, I cut a washer out of a piece of leather about 1/16" thick and punched a hole in it to fit the firing pin. Thus the revolver may be dry-fired without the hammer and firing pin making contact.—DON POWELL

### Extractor modification

To avoid necessity of chasing ejected brass when bench or varmint shooting with Mauser 98 type rifles, remove ejector entirely and then file a small half-round cut on edge of extractor hook contacting bottom of extractor groove in cartridge case. This modification permits smooth bolt closure on single loaded rounds and empty cases are readily tipped out of breech with index finger.—H. C. CAREY



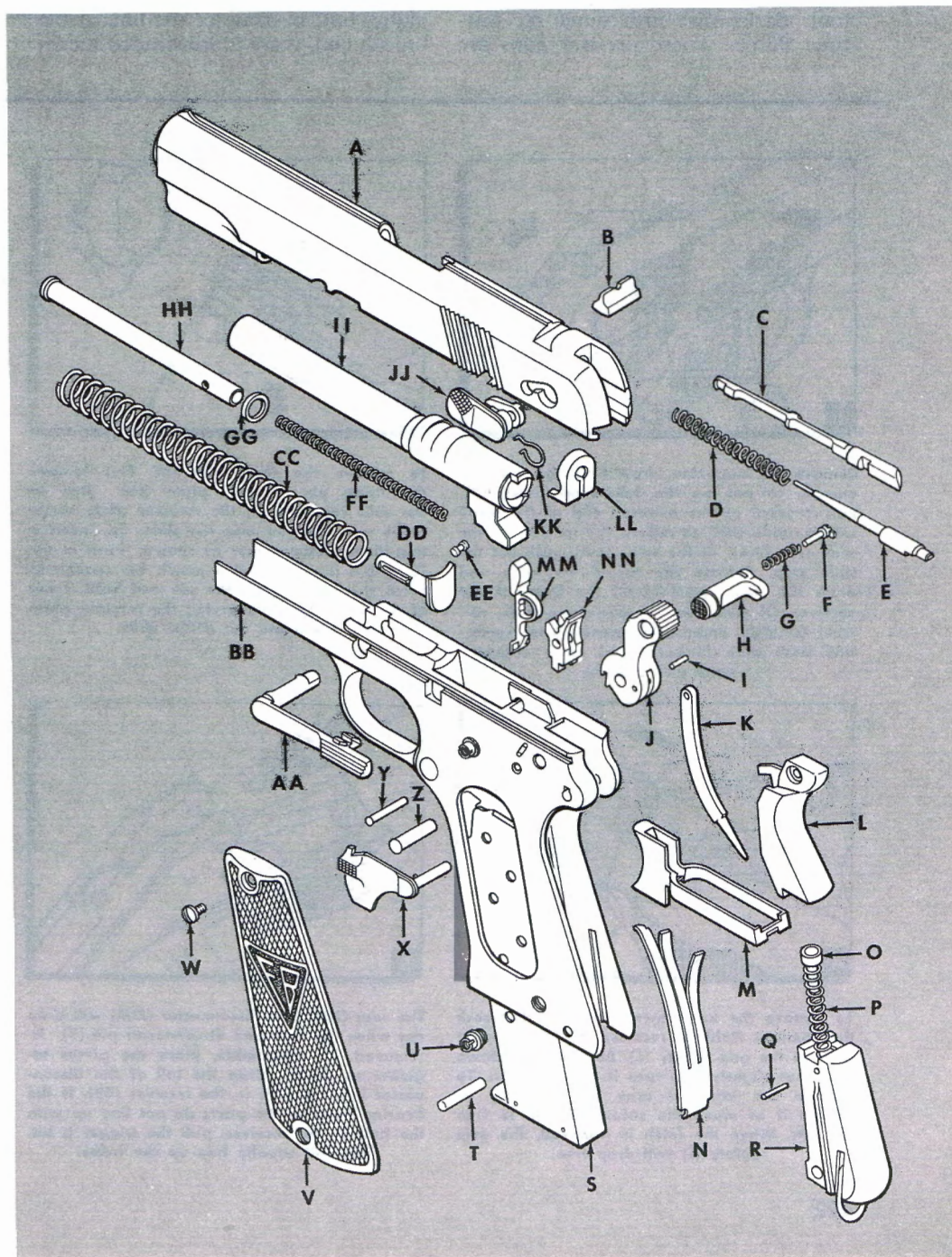
# Polish Radom P35

By E. J. Hoffschmidt



## LEGEND

- A—Slide
- B—Rear sight
- C—Extractor
- D—Firing pin spring
- E—Firing pin
- F—Magazine catch spring guide
- G—Magazine catch spring
- H—Magazine catch
- I—Hammer strut pin
- J—Hammer
- K—Hammer strut
- L—Grip safety
- M—Trigger
- N—Sear spring
- O—Main spring cap
- P—Main spring
- Q—Main spring retainer pin
- R—Main spring housing
- S—Magazine
- T—Main spring housing pin
- U—Grip screw bushing
- V—Left-hand grip
- W—Grip screw
- X—Take-down latch
- Y—Sear and disconnector pin
- Z—Hammer pin
- AA—Slide stop
- BB—Frame (receiver)
- CC—Recoil spring
- DD—Slotted recoil spring guide
- EE—Spring guide retainer pin
- FF—Auxiliary recoil spring
- GG—Recoil spring stop
- HH—Recoil spring guide
- II—Barrel
- JJ—Hammer lowering catch
- KK—Hammer catch operating spring
- LL—Firing pin retainer plate
- MM—Disconnector
- NN—Sear





**I**T is interesting to note that in almost every country that the German armies overran, they were faced with weapons designed by the ingenious John Browning. Poland was no exception, for it was there that the Germans had their first run-in with the 9 mm. Radom P35 automatic pistol.

In 1935, with the help of Fabrique Nationale engineers, Poland started production of what might be termed a modernized version of the Colt 1911 automatic pistol. The guns were manufactured at the government arsenal at Radom in central Poland. Like the vast majority of pre-war European guns, they were well made and finely finished. Pre-war pistols can be recognized easily by the large Polish eagle crest that is engraved on the slide; also, by the absence of the tool marks that are found on war-time P35's. These pre-war guns are

rather scarce, since most of the guns that found their way over here were manufactured under German occupation. Many of the occupation guns were manufactured without the take-down latch, making the gun rather difficult to field-strip.

The gun weighs 2 pounds, 3 ounces, is 8 $\frac{1}{32}$  inches long, and is strong enough to handle any of the Service 9 mm. Luger cartridges manufactured today or used during World War II.

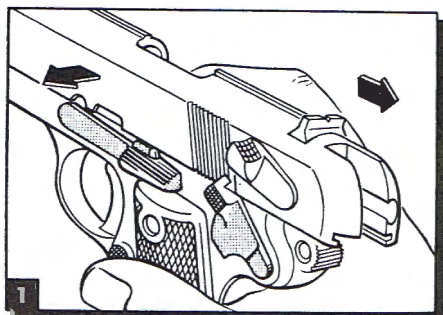
Radom pistols closely resemble the Colt 1911 or, even more, the Colt Commander with its round hammer and short spur on the grip safety. The main mechanical difference is the use of a captive recoil spring and the barrel locking device. The gun has a locked action that is unlocked by recoil like the .45 automatic, but, in place of the link at the breech end, there is substituted a cam

projection to unlock the barrel from the slide.

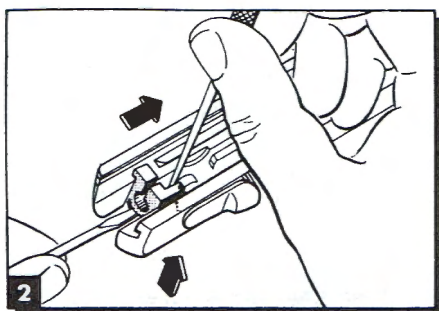
The use of a captive recoil spring is one of the best features of this gun. It is pre-loaded and fixed to a recoil spring guide, making it very easy to remove or install. Another novel feature of the Radom P35 is the hammer lowering device. A large thumb catch is found on the left side of the slide, back near the hammer. If you wish to lower the hammer when it is cocked, press the thumb catch down hard. The hammer will fall but will not fire the cartridge in the chamber because the thumb catch moved the firing pin out of the way before tripping the hammer.

Another novel but deceiving feature is the take-down latch. This latch is often mistaken for a safety. It is in no way a safety; it merely locks the slide back for disassembly.

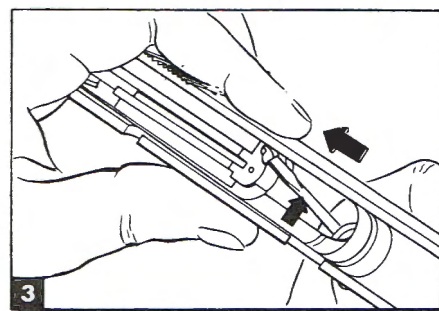
♦ ♦ ♦



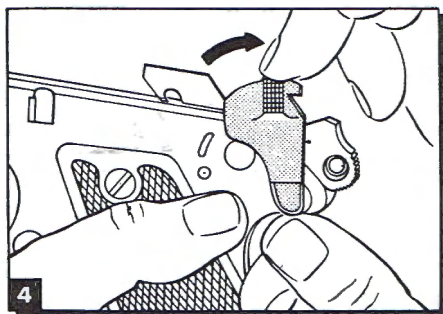
Remove the magazine, draw back the slide far enough to put on the take-down latch (X). Pull forward on the exposed end of the recoil spring guide (HH) to relieve the tension on the slide stop (AA). At the same time, push out the slide stop. Release the take-down latch and draw the slide assembly off the front of the receiver. (If pistol has no take-down latch, retract the slide, depress hammer-lowering catch, and ease slide forward until catch engages notch on hammer.)



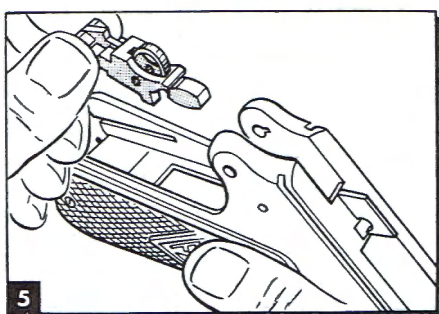
To remove the firing pin (E), first remove the firing pin retainer plate (LL). Due to the split construction, the retainer plate sometimes gets wedged into the slide. So, insert a thin-bladed screwdriver as shown. Push in the firing pin (E) with a thin punch far enough to catch the shoulder on the pin and hold it out of the bushing, while prying the retainer plate down and out of the slide.



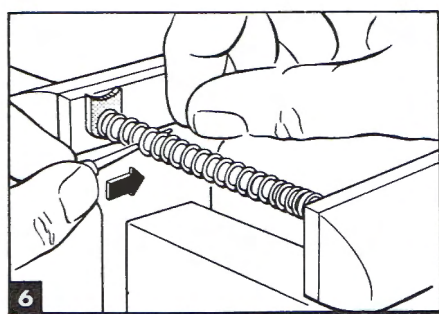
To remove the extractor (C), pull out the recoil spring assembly (CC through HH) and disengage the barrel (II) from the slide. Remove the firing pin retainer plate (LL). Using a small screwdriver, press the extractor (C) outward toward the outside of the slide, pressing rearward at the same time. Remove the extractor through the rear of the slide.



To remove the take-down latch (X), first cock the hammer. Hold the receiver (BB) as shown to depress the grip safety (L). Pull the take-down latch out slightly and turn it up as shown. To remove the latch, it may be necessary to wiggle it or move the safety slightly to free the pin. When the latch is removed, the grip safety (L) will drop free.

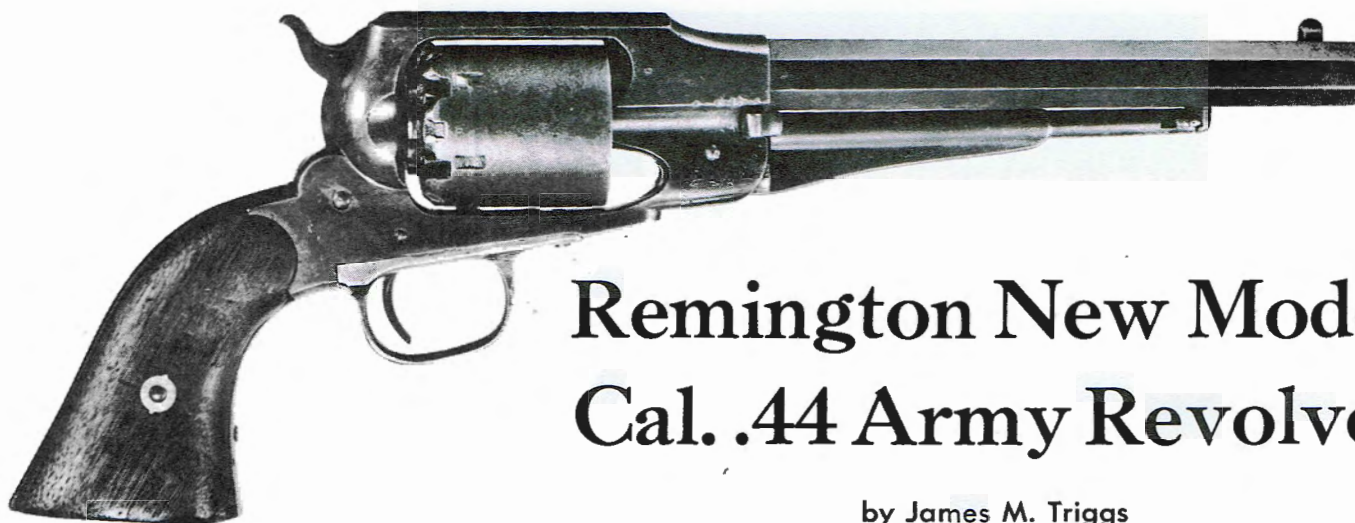


The sear (NN) and disconnector (MM) will drop out when the sear and disconnector pin (Y) is removed. To reassemble, place the pieces together as shown. Drop the tail of the disconnector into the hole in the receiver (BB). If the bearing holes in the parts do not line up with the hole in the receiver, pull the trigger a bit. This will usually line up the holes.



The recoil spring on this gun must be removed as an assembly. To disassemble the recoil spring group (CC through HH), squeeze the assembly slowly in a vise until the slotted recoil spring guide (DD) is in as far as it can go. Now, using a thin punch, push out the spring guide retainer pin (EE). It may be necessary to spread the coils of the spring to remove the pin.





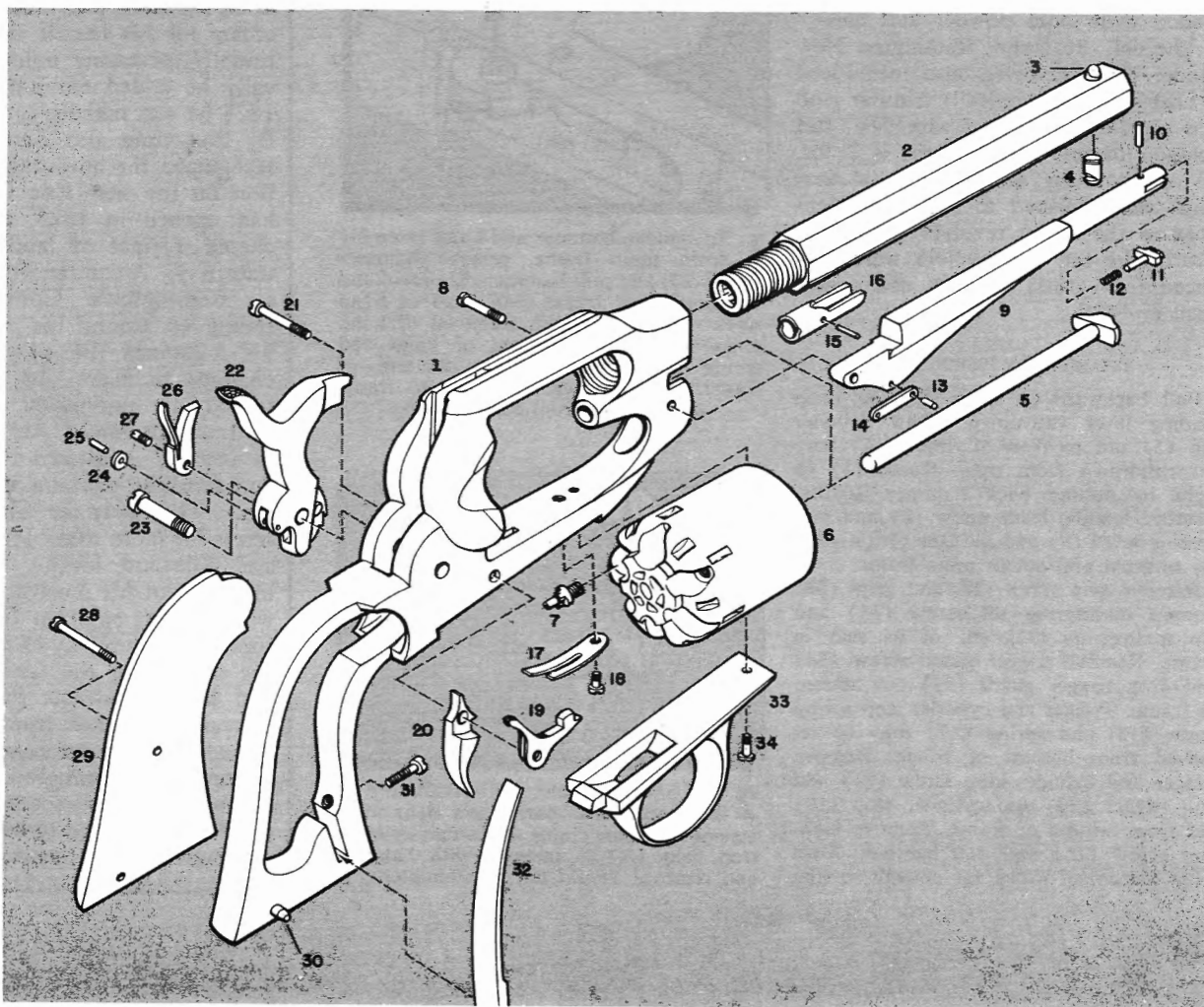
# Remington New Model Cal. .44 Army Revolver

by James M. Triggs

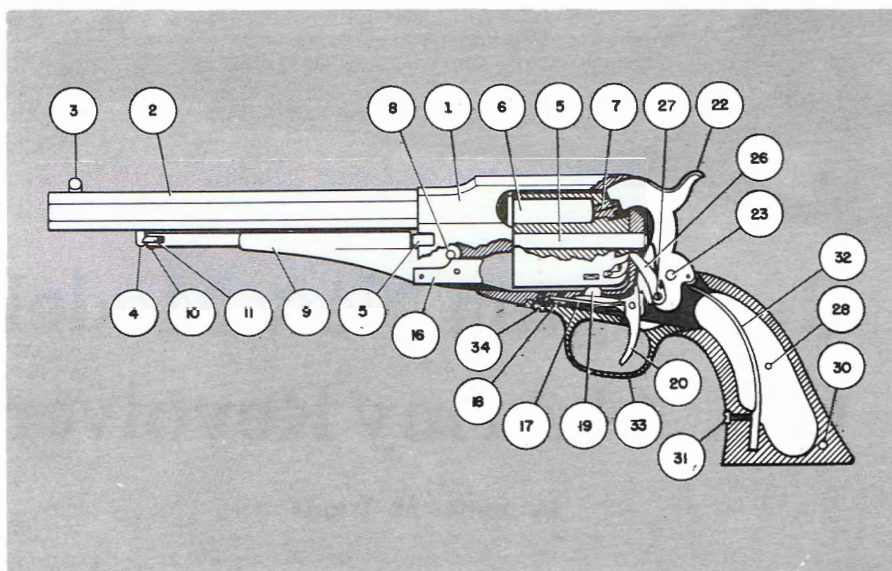
## Parts Legend

- |                                      |  |
|--------------------------------------|--|
| 1. Main frame                        | 18. Trigger and cylinder stop spring screw |
| 2. Barrel                            | 19. Cylinder stop                          |
| 3. Front sight                       | 20. Trigger                                |
| 4. Barrel stud                       | 21. Trigger and cylinder stop screw        |
| 5. Cylinder pin                      | 22. Hammer                                 |
| 6. Cylinder                          | 23. Hammer screw                           |
| 7. Nipples (6)                       | 24. Hammer roll                            |
| 8. Loading lever screw               | 25. Hammer roll pin                        |
| 9. Loading lever                     | 26. Hand and hand spring assembly          |
| 10. Latch pin                        | 27. Hand screw                             |
| 11. Latch                            | 28. Grip screw                             |
| 12. Latch spring                     | 29. Grips (2)                              |
| 13. Front plunger link pin           | 30. Grip pin                               |
| 14. Plunger link                     | 31. Mainspring set screw                   |
| 15. Rear plunger link pin            | 32. Mainspring                             |
| 16. Plunger                          | 33. Trigger guard                          |
| 17. Trigger and cylinder stop spring | 34. Trigger guard screw                    |

THE cal. .44 6-shot Remington New Model Army percussion revolver, introduced in 1863, was a Civil War U. S. martial arm second only to the Colt in importance. Upon discontinuance of production in 1875, a total of over 140,000 had been manufactured. For the military it was furnished in blue finish, with casehardened hammer and oil-finished walnut grips. The oval trigger guard is of brass. The commercial version of the New Model was blue finished with varnished walnut grips. It was also available plated or engraved







The sectional drawing shows all parts of the assembled revolver

and with pearl or ivory grips at extra cost.

With its 8" octagon barrel the New Model weighs 2 lbs. 14 ozs. It represents one of the highest developments of the percussion revolver. A noteworthy design feature is the provision of hammer recesses between the nipples which permitted it to be carried safely fully loaded with hammer down. It was regularly used with combustible cartridges but was also conveniently loaded with loose powder and ball.

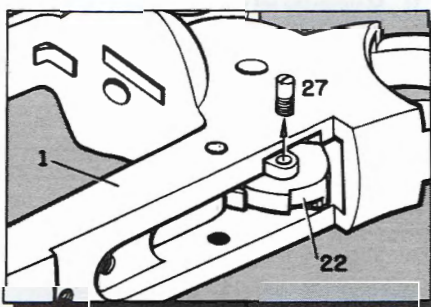
The cal. .36 6-shot Remington New Model Navy revolver, also introduced in 1863, is mechanically similar and was regularly furnished with 7 $\frac{3}{8}$ " full octagon barrel. Total weight is 2 lbs. 10 ozs. Military and commercial versions were finished to same specifications as the Army revolver. Over 32,000 of the cal. .36 revolver were produced from 1863 until its discontinuance in 1888.

#### DISASSEMBLY PROCEDURE

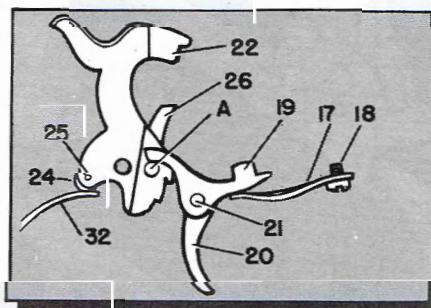
Pull backward on latch (11) and drop loading lever (9) down. Draw cylinder pin (5) out to front. Cylinder (6) may be withdrawn from main frame (1) to right by pulling back hammer slightly. Remove loading lever screw (8) and pull loading lever (9) and plunger (16) assembly to front and out of main frame.

Remove grip screw (28) and grips (29). Loosen mainspring set screw (31) and tap mainspring (32) out of its seat in frame. Remove trigger guard screw (34) and drop trigger guard (33) out bottom of frame. Trigger and cylinder stop spring screw (18) and spring (17) may be removed from bottom of frame. Remove trigger and cylinder stop screw (21) and pull trigger (20) and cylinder stop (19) out from bottom of frame. Remove hammer screw (23) and pull hammer down from bottom of frame far enough so that

head of hand screw (27) on left side of hammer is exposed. Remove hand screw and pull hand and spring assembly (26) down and out bottom of frame. Hammer may now be removed from top of frame. Reassembly is accomplished in reverse order.



**1** To remove hammer and hand assembly from main frame, remove hammer screw (23) and pull hammer (22) down and out bottom of frame until head of hand screw (27) is exposed. Removal of hand screw will allow removal of hand and spring assembly (26) from bottom of frame. Pull hammer back up into frame and remove from top of frame



**2** The drawing shows the relationship of lock mechanism parts from right when assembled inside frame. Note that cylinder stop cam (A) is integral with hammer and removal should not be attempted ■

## A MAN TO REMEMBER

ELIPHALET REMINGTON

*From Blacksmith to  
Riflemaker*

Born—Oct. 27, 1793

Died—Aug. 21, 1861



**A**LTHOUGH born at Suffield, Conn., most of Remington's life was spent in central New York State, where his parents moved when he was about 6 years old. Here he grew up, helping his father with both the farming and the general blacksmithing and mechanical work which he performed for the community. Like most boys, Remington wanted a rifle of his own, and when he was 16 he decided to test the skill he had acquired as a blacksmith by forging a gun barrel out of scrap iron from the family shop. So well did he perform this task that the gunsmith to whom he took the barrel for finishing encouraged him to go home and make more.

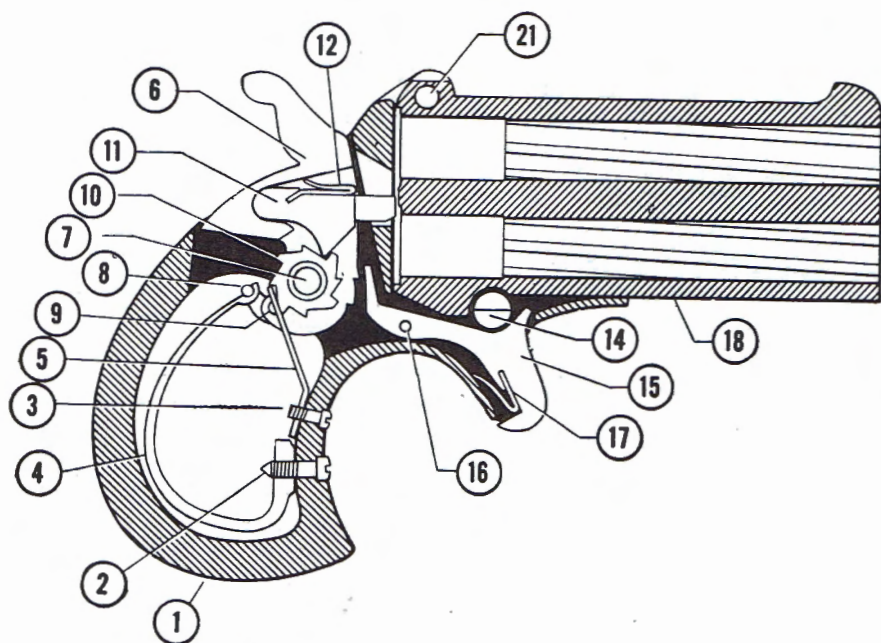
These first barrels were the beginning of Remington's career as a fire-arms manufacturer. His reputation as an excellent workman spread, and orders for his barrels came in continually increasing numbers. Gradually he added equipment, and by 1828 he was making complete guns. By that time also Remington had recognized the advantages of a location on the new Erie Canal which had opened in 1825, and he purchased a tract of land along that waterway. A community known first as Remington's Corners quickly sprang up around his shops, but at his insistence the name was later changed to Ilion. In 1845 he assumed an unfinished government contract for model 1841 rifles, and in 1846-47 purchased the complete gun finishing equipment of Ames & Co. Thereafter he obtained contracts for more rifles, Jenks carbines, and Maynard locks. In 1859 he brought out his revolver which soon won popular approval for its strong frame and simplicity of design. With the coming of the Civil War new and larger contracts for arms and increased demands from individuals brought still greater expansion to the armory, but Remington died before the new shops were completed, and the business passed to his three sons.

—HAROLD L. PETERSON.



# REMINGTON DOUBLE DERRINGER

By James M. Triggs



## LEGEND

1. Frame
2. Mainspring screw
3. Firing pin ratchet spring screw
4. Mainspring
5. Firing pin ratchet spring
6. Hammer
7. Hammer pin
8. Hammer stirrup
9. Hammer stirrup pin
10. Firing pin ratchet
11. Firing pin
12. Firing pin spring
13. Barrel lock screw
14. Barrel lock
15. Trigger
16. Trigger pin
17. Trigger spring
18. Barrels
19. Ejector
20. Ejector screw
21. Barrel hinge screw
22. Grips (2)
23. Escutcheons (2)
24. Grip screw

THE fact that over 150,000 were eventually manufactured attests to the long-time popularity of the famous .41 caliber Remington Double Derringer pistol. Patented on December 12, 1865, and first offered in 1866, this stubby little 11-ounce three-inch barrel gun was invented in 1864 by William Elliot, a gun designer employed by Remington in 1861. It was not designed by Henry Deringer (note the one 'r' in Henry's name), inventor of the equally famous single-shot Deringer pistol. Like the original muzzle-loading Deringer, Elliot's superposed-barrel breech-loading gun owed its effectiveness to its relatively large caliber. The .41 rimfire cartridge with its blunt-nosed 130-grain lead bullet backed by ten grains of blackpowder was more than adequate.

The Remington Double Derringer,

production of which was discontinued in 1935, is of particular interest to arms collectors since it was offered in a varied assortment of finishes running the gamut from plain blue with hard rubber grips to elaborately engraved versions with ivory, walnut, or pearl grips. Guns plated with silver, gold, or nickel are also frequently encountered in both standard and custom 'presentation' grades.

Early Double Derringers are marked (in capital letters) on top of barrel: "E. Remington & Sons, Ilion, N.Y., Elliot's Patent Dec. 12, 1865." Later models are marked (in capital letters): "Remington Arms Co., Ilion, N.Y." or "Remington Arms-UMC Co., Ilion, N.Y."

## DISASSEMBLY PROCEDURE

Turn barrel lock (14) to forward position and swing barrel up to determine that pistol

is unloaded. Remove barrel hinge screw (21) and separate barrel (18) from frame (1). Ejector (19) may be slid out of its slot on left-hand side of barrel after first removing ejector screw (20).

Unscrew grip screw (24) and remove grips (22) from frame. Pull hammer (6) all the way back to cocked position and slip blade of screwdriver between mainspring (4) and inside of frame. Holding mainspring compressed with blade of screwdriver, release hammer slowly at same time shaking or tapping frame slightly to allow hammer stirrup (8) to fall free of its seat at end of mainspring. Unscrew mainspring screw (2) and firing pin ratchet spring screw (3) and remove mainspring (4) and firing pin ratchet spring (5) from frame.

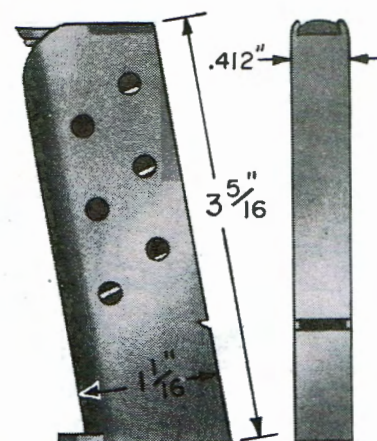
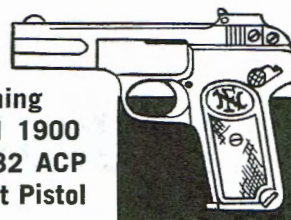
Hammer (6), with firing pin ratchet (10) and firing pin and spring (11 and 12) intact, can be removed from top of frame after drifting out hammer pin (7). The ratchet (10) and firing pin and spring (11





## PISTOL MAGAZINES

Browning  
Model 1900  
Cal. .32 ACP  
Pocket Pistol



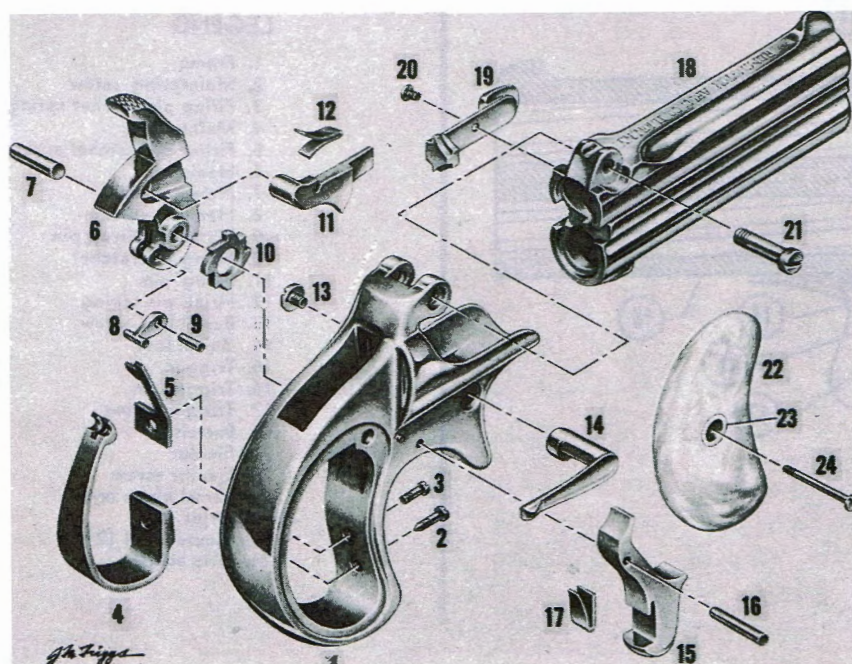
The Browning Model 1900 was the first successful pocket automatic pistol, although overshadowed by later Browning designs. More than 3 million Model 1900 pistols were manufactured in Belgium by Fabrique Nationale. The gun was so popular that it was extensively copied in Europe and Asia.



The magazine follower is a piece of flat sheet metal with rounded end cut back to a slightly beveled, chisel-like edge. Unlike later FN magazines, Model 1900 magazines are rarely found with a trademark.



The slot cut into the backstrap is the best point of identity for the Browning Model 1900 magazine.—  
E. J. HOFFSCHMIDT.



and 12) are easily pulled free of hammer with the fingers. Although not normally disassembled except for replacement, hammer stirrup (8) can be removed by drifting out its retaining pin (9).

Unscrew barrel lock screw (13) and remove barrel lock (14) from right-hand side of frame. Drift out trigger pin (16) and remove trigger (15) and spring (17) intact from top of frame. The small pin projecting from right-hand side of frame between trigger pin hole and hammer pin hole is a retaining or detent stud for the barrel lock and is permanently installed in frame.

Reassemble pistol in reverse order. To reinstall mainspring, replace mainspring and mainspring screw in frame. Replace hammer assembly through top of frame and fit hammer stirrup (8) to end of mainspring (4). Compressing mainspring by use of a screwdriver blade between mainspring and rear of frame will allow hammer to be pressed into position and will line up hammer pin hole in hammer and frame, per-

mitting reentry of hammer pin.

The pistol is shown on page 38 in a profile cross-section with action in fired position, and barrel (18) locked to frame (1) by action of the barrel lock (14). When hammer (6) is drawn back to its rearmost position, the sear end of trigger (15) will engage lower notch on hammer holding it in cocked position until trigger is depressed. As hammer is drawn back, firing pin ratchet spring (5) holds firing pin ratchet (10) in a fixed position. At hammer's rearmost position, lower arm of firing pin (11) drops into cut in ratchet (10)—in this case the deeper cut which allows firing pin to drop into lower barrel chamber on firing.

As hammer falls, ratchet (10) is turned one notch clockwise by forward movement of lower arm of firing pin (11). On again cocking hammer above process is repeated except that arm of firing pin will now rest in more shallow cut in ratchet, thus raising firing pin so that on firing it will drop into upper chamber of barrel.





## REMINGTON MODEL XP-100 PISTOL

Illustrations by JOHN F. FINNEGAN  
Text by LUDWIG OLSON,

The Remington Model XP-100 single-shot pistol is distinguished by its unorthodox appearance. Designed for hunting varmints and small game, this bolt-action handgun was introduced in 1963. It fires the .221 Remington Fire Ball center-fire cartridge loaded with a 50-gr., pointed soft-point bullet. The muzzle velocity is 2650 f.p.s. (feet per second), which is exceptionally high for a handgun. Muzzle energy is 780 ft.-lbs.

Chiefly responsible for the unusual appearance of this pistol is the rear position of the action, mostly behind the grip. Other features contributing to the unusual appearance are the ventilated barrel rib, long fore-end extending almost to the muzzle of the 10-13/16" barrel, peculiar forward bend of the bolt handle, and the large flare around the base of the grip.

As with many modern bolt-action rifles, the bolt of the XP-100 has dual-opposed, integral locking lugs which engage shoulders in the receiver ring. The extractor and plunger-type ejector are in the bolt head. A loading groove is milled in the receiver floor. The cartridge is dropped into this groove, and is chambered by closing the bolt.

Cocking is accomplished by cam ac-

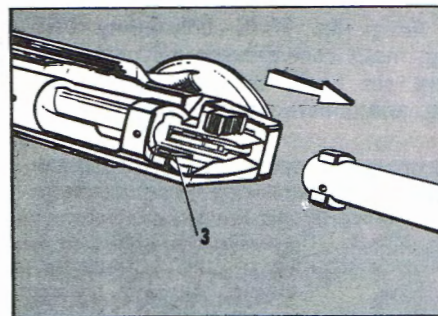
tion chiefly when the bolt is turned open. The firing pin fall is only 1/4". This short fall and the strong mainspring give fast lock time.

The trigger mechanism is of single-stage design with a light, clean pull. It is screw-adjustable for sear engagement and overtravel after removing the stock. A long bar which Remington calls the trigger link connects the trigger assembly with the sear mechanism at the lower rear of the receiver.

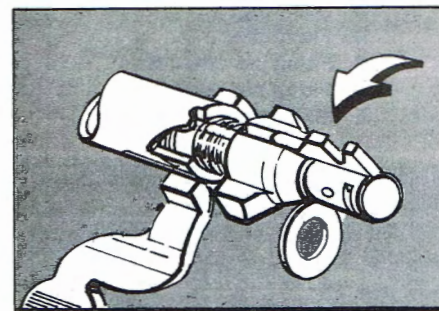
A telescope sight can be fitted to this pistol easily since the receiver top is drilled and tapped for scope mounts. Also, the thumb-operated safety is on the right side of the receiver tang where it does not interfere with low mounting of a scope. The barrel rib is fitted with a flat-top blade front sight and a fully-adjustable, square-notch open rear sight, but the full performance capabilities of the pistol are not realized unless a scope sight is used.

Made of DuPont "Zytel" structural nylon, the walnut-color stock has black wavy streaks which simulate wood grain. Inlaid in the grip bottom and fore-end sides are diamond-shaped, white plastic inlays. The fore-end tip and trigger guard are black plastic. Both sides of the grip are checkered. A thumb rest on each side gives a comfortable grasp for both right- and left-handed users, and facilitates a two-hand hold.

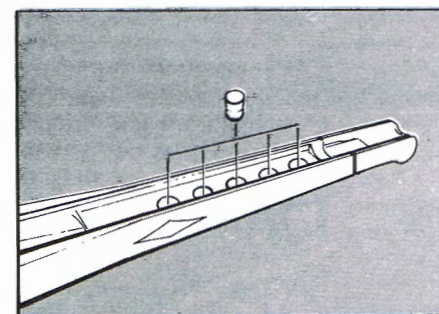
While this pistol is unusual in appearance, it is accurate, reliable, and well suited for its intended purpose. ■



**1** To disassemble the pistol, push safety (26) forward, open bolt (2), and remove any cartridge from chamber. Pull bolt rearward until bolt stop (3) is engaged. Push bolt stop downward with small screwdriver or similar tool. Then, pull bolt rearward out of pistol.



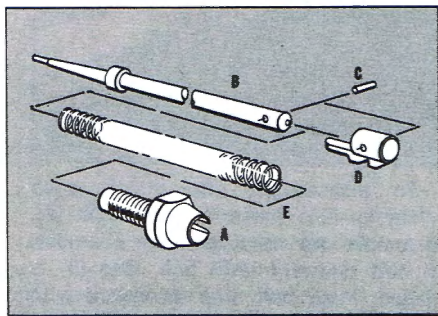
**2** Hold firing pin head (D) in padded vise. Pull bolt forward and insert washer between firing pin head and bolt plug (A). Then, unscrew firing pin assembly from bolt. Place a metal sleeve (3/8" diameter, 7/8" long, with 3/16" hole through it lengthwise) over front of firing pin (B), and screw bolt plug back into bolt until washer is released. Drive out firing pin cross pin (C) with close-fitting drift punch, and remove firing pin head. Unscrew bolt plug carefully as it is under force of mainspring (E). Remove bolt plug and mainspring from firing pin.



**3** Unscrew forward receiver screw (12) and rear receiver screw (15). Remove stock (40). With stock removed, cal. .38 lead bullets can be placed in holes in fore-end to increase weight of pistol. Reassemble in reverse. During reassembly of firing mechanism, place metal sleeve over front of firing pin, reassemble mainspring and bolt plug on firing pin, and screw bolt plug into bolt. Then, replace firing pin head and firing pin cross pin

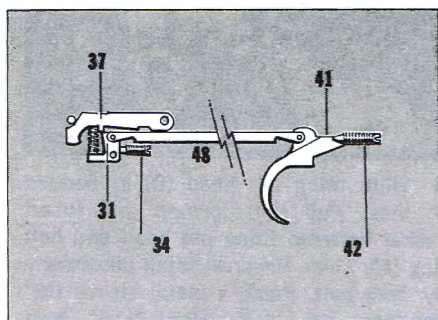


on firing pin. While unscrewing bolt plug, insert coin between bolt plug and firing pin head, complete unscrewing plug, and remove metal sleeve.

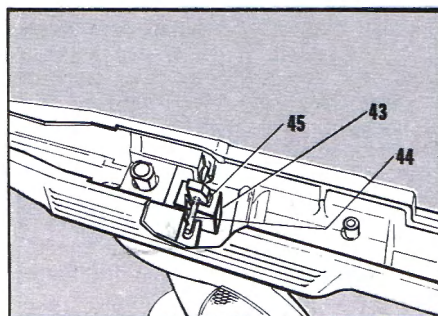


#### FIRING PIN ASSEMBLY

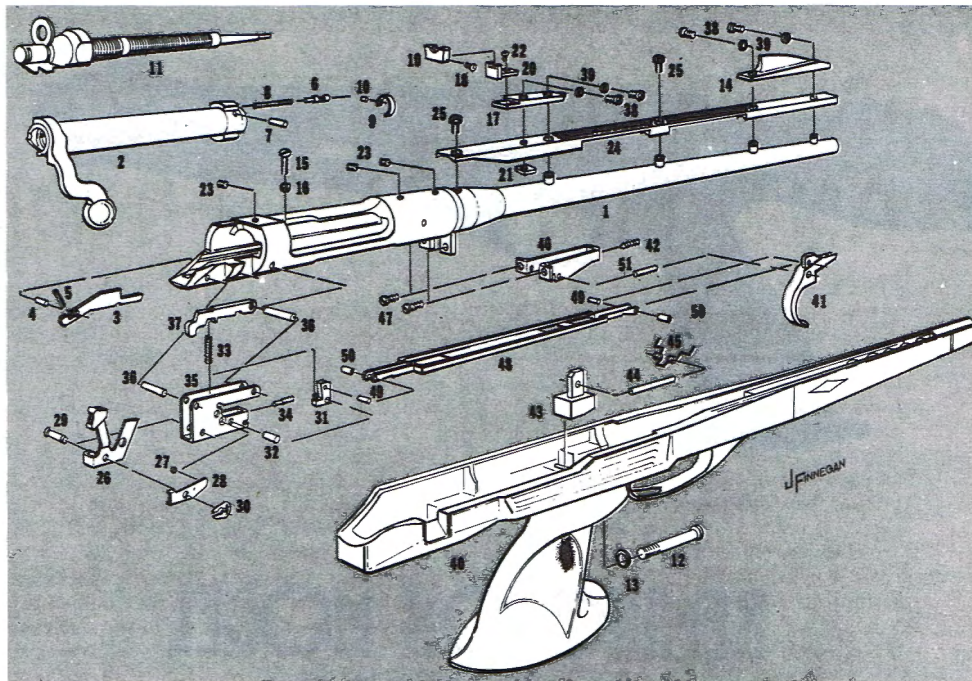
- A. Bolt plug
- B. Firing pin
- C. Firing pin cross pin
- D. Firing pin head
- E. Mainspring



4 Sear block stop screw (34) adjusts engagement of sear block (31) to sear safety cam (37). This engagement should be about .020". Trigger adjusting screw (42) on forward end of trigger housing (46) can be screwed in or out to regulate play of trigger (41).

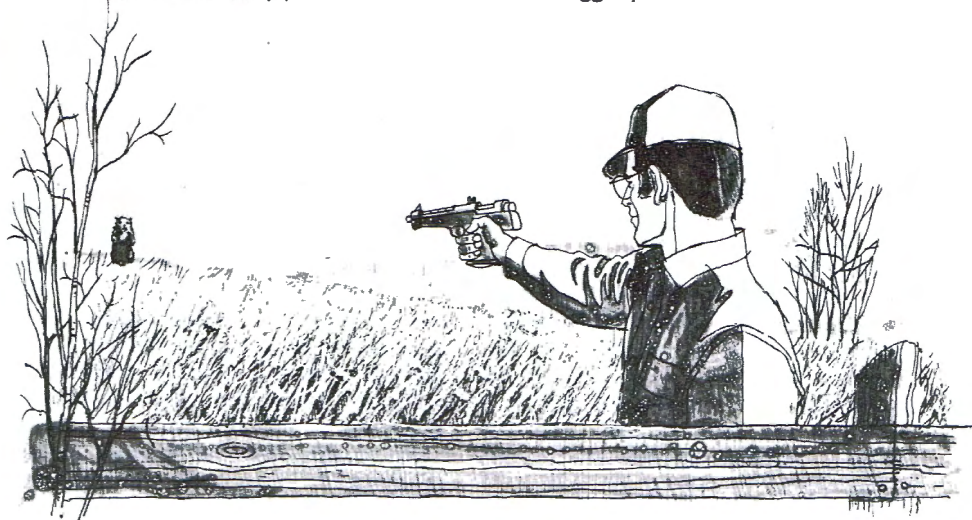


5 Trigger balance (43) must be positioned with large angle on bottom pointing forward. Both ends of trigger balance pin (44) must seat in slots of stock. Trigger balance spring (45) encircles pin on both sides of balance. Ends of spring engage against stock wall to hold balance under tension forward and central in stock. Trigger balance engages through opening in trigger link when stock is reassembled to action.



#### PARTS LEGEND

- |                                   |                               |
|-----------------------------------|-------------------------------|
| 1. Barrel assembly                | 26. Safety assembly           |
| 2. Bolt assembly                  | 27. Safety detent ball        |
| 3. Bolt stop                      | 28. Safety detent spring      |
| 4. Bolt stop pin                  | 29. Safety pivot pin          |
| 5. Bolt stop spring               | 30. Safety snap washer        |
| 6. Ejector                        | 31. Sear block assembly       |
| 7. Ejector pin                    | 32. Sear block pin            |
| 8. Ejector spring                 | 33. Sear block spring         |
| 9. Extractor                      | 34. Sear block stop screw     |
| 10. Extractor rivet               | 35. Sear housing              |
| 11. Firing pin assembly           | 36. Sear pin (2)              |
| 12. Forward receiver screw        | 37. Sear safety cam           |
| 13. Forward receiver screw washer | 38. Sight screw (4)           |
| 14. Front sight                   | 39. Sight washer (4)          |
| 15. Rear receiver screw           | 40. Stock assembly            |
| 16. Rear receiver screw washer    | 41. Trigger                   |
| 17. Rear sight base               | 42. Trigger adjusting screw   |
| 18. Rear sight elevation screw    | 43. Trigger balance           |
| 19. Rear sight eyepiece           | 44. Trigger balance pin       |
| 20. Rear sight leaf               | 45. Trigger balance spring    |
| 21. Rear sight nut                | 46. Trigger housing           |
| 22. Rear sight windage screw      | 47. Trigger housing screw (2) |
| 23. Receiver plug screw (3)       | 48. Trigger link              |
| 24. Rib                           | 49. Trigger link pin (2)      |
| 25. Rib screw (2)                 | 50. Trigger link roller (2)   |
|                                   | 51. Trigger pin               |







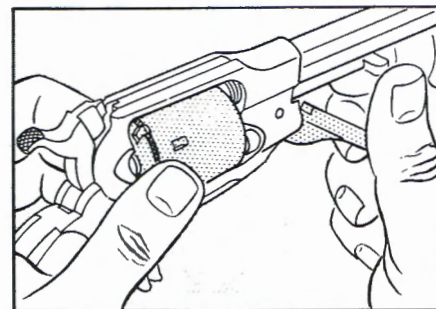
# REMINGTON NEW MODEL POCKET REVOLVER

By EDWARD J. HOFFSCHMIDT

THE Civil War proved the effectiveness of the metallic cartridge over the cap-and-ball system. Not long afterward the major gun companies revised their lines and adopted the new rimfire cartridges. Remington began by converting their military revolvers to handle metallic cartridges. In most cases the conversions were such that the gun could not be readily converted back to shoot loose powder and ball or combustible cartridges.

The Remington New Model Pocket

Revolver conversion is unique in this respect. It started out as a cal. .31 percussion arm. For conversion to metallic cartridges, a clever 2-piece cylinder was designed. It consisted of a 5-shot cylinder bored through from end to end, and a back-plate. The cylinder was counter-bored to recess the heads of the cartridges. A back-plate that contained the cylinder rotating ratchet was loosely pinned to the end of the cylinder. The plate was machined to allow the hammer to hit only the rim of the cartridge. Safety notches were provided between the firing notches. When the gun was



**1** To remove the cylinder (5) from either percussion model or cartridge model, pull hammer back to half cock position. Pull loading lever (27) down far enough to allow cylinder pin (3) to be withdrawn. When pin is all the way forward, push cylinder out from left to right. If cylinder will not come out, check to see if loading lever is down too far. If it is, it may have pushed the rammer into one of the chambers

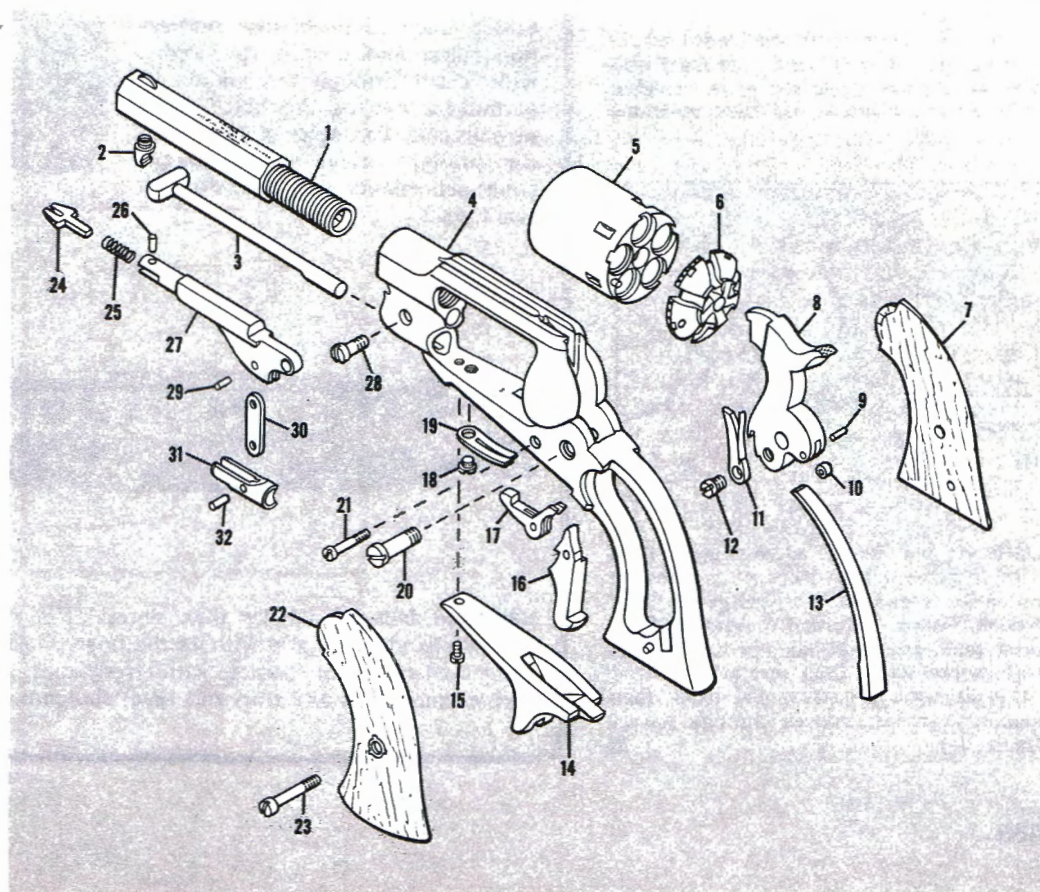
loaded, the hammer rested on one of the safety notches.

Since the conversion retained the rammer assembly, it was a simple matter to switch back to cap-and-ball loading. The shape of the hammer was such that the lower portion fired the percussion caps, while the upper lip fired the metallic cartridge, depending on which cylinder was installed.

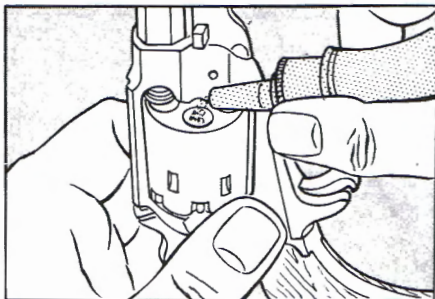
The New Model Pocket Revolver was first marketed around 1863 and proved fairly popular. The conversion system worked so well that the gun was offered as a combination gun until around 1888.

## Parts Legend

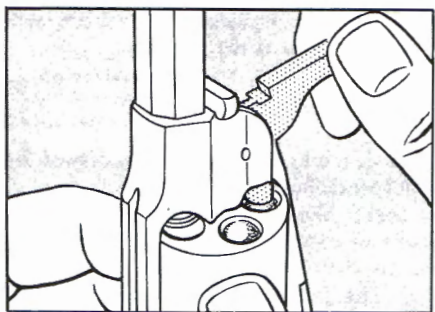
1. Barrel
2. Rammer latch
3. Cylinder pin
4. Frame
5. Cylinder
6. Cylinder back-plate
7. Right grip
8. Hammer
9. Roller pin
10. Roller
11. Hand
12. Hand retaining screw
13. Mainspring
14. Trigger guard
15. Trigger guard screw
16. Trigger
17. Cylinder stop
18. Trigger spring screw
19. Trigger spring
20. Hammer screw
21. Trigger screw
22. Left grip
23. Grip screw
24. Loading lever latch
25. Latch spring
26. Latch pin
27. Loading lever
28. Lever screw
29. Lever link pin
30. Link
31. Rammer
32. Rammer link pin





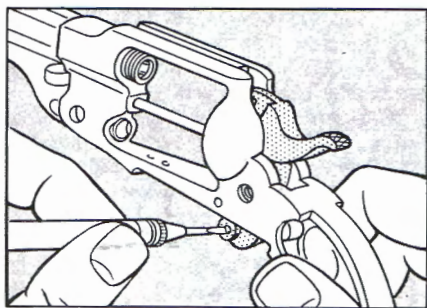


**2** To load the cap-and-ball model, first fire a cap on each nipple to clear it. Then hold gun as shown, and throw a charge of FFg blackpowder into the chamber; place a cal. .31 ball on top and rotate the chamber under the rammer. Never, under any circumstances, load the gun with smokeless powder



**3** When the ball is under rammer (31), pull down loading lever (27) until it presses ball well below edge of chamber. If ball protrudes it will interfere with rotation of cylinder. After all balls are in place, fill remaining area around balls with heavy grease. This will act as a lubricant and prevent a flashover from setting off adjoining chambers. When all is ready, put caps on nipples and drop hammer until it rests in safety notch.

The cartridge version was loaded by removing back-plate (6) and inserting 5 rim-fire cal. .32 cartridges. The plate was then replaced and cylinder put back in frame



**4** The Remington New Model Pocket Revolver is relatively easy to disassemble; but before attempting it, it is wise to place a few drops of penetrating oil on the screws. After trigger guard (14), hammer screw (20), and mainspring have been removed, push hammer down. This will expose screw (12) that retains hand (11). Remove this screw and hand, then hammer can be removed through top of frame (4)

## Illustrated Definitions

Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not intended to be technically or legalistically complete

**One-hand pistol**—Semi-automatic pistol which requires only one hand for retracting the slide. An example is the German Lignose .25 auto pocket pistol with curved extension on the bottom of its slide, forward of the trigger. The slide can be retracted by pressing rearward on the extension with the finger.

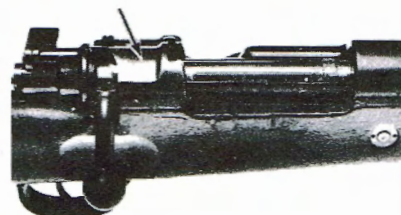
The one-hand pistol can be operated with one hand in the event of a jam or misfire, and can be carried with chamber empty and quickly made ready for firing with one hand. However, it is impractical in calibers more powerful than .25 auto since slide retraction with the trigger finger is too difficult and awkward with long, powerful cartridges. This type of pistol was not extensively produced.



**Bottleneck cartridge**—Cartridge with larger diameter case body than neck, and with body and neck joined by a shoulder. It has greater powder capacity in proportion to its length than a straight or tapered cartridge of the same caliber, and is better for ignition as its powder column is shorter. The majority of modern center-fire rifle cartridges, and some center-fire pistol cartridges, are of this type as are a number of black-powder rifle cartridges.

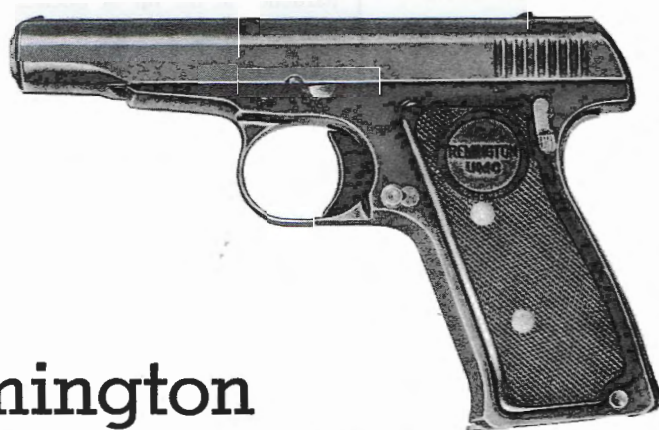
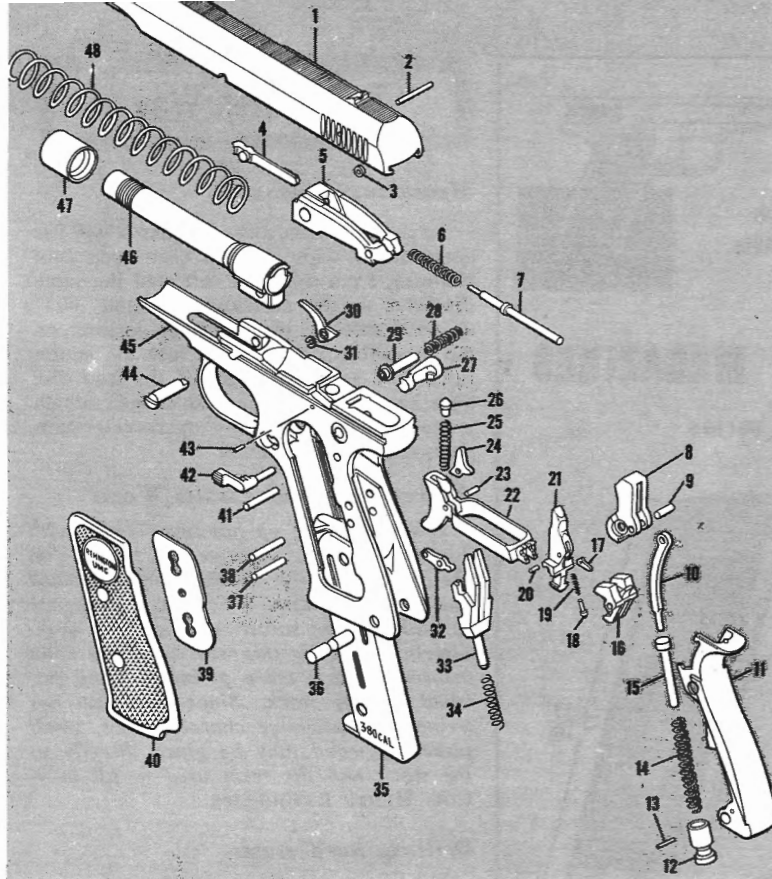


**Receiver bridge**—Rear part of the receiver which extends completely or partially over the bolt or breechblock. There is a solid-type receiver bridge, such as in Mauser bolt-action rifles, and a split-type bridge with a cut through the middle to permit passage of the bolt handle or extractor. Examples of guns with the split-type bridge are the Mannlicher-Schoenauer and Krag-Jorgensen rifles.



**Beavertail fore-end**—Wider than normal fore-end which provides a comfortable hand-filling grip without the fingers touching the barrel. It is especially well suited for shooters with large hands, and is used mainly on target and varmint rifles and trap and skeet shotguns.





# Remington Pocket Pistol Model 51

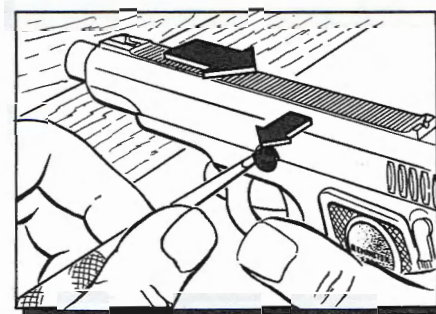
By E. J. Hoffschmidt

It is too bad that Remington stepped out of the pistol business, for their handguns were, and still are, acclaimed far and wide. Their Civil War revolvers were the best of their time, and the little .41 caliber over-and-under deringer blasted itself into history.

Many of these Remington pistols command high prices today, but the Model 51 does not fall into this category. The Model 51 was worked out by John D. Pedersen, designer of the "Pedersen Device" of World War I fame, and the Pedersen semi-automatic

rifle. The design incorporates a number of noteworthy features, best of which is the grip outline. This shape was settled on only after hundreds of experiments had been carried out to determine the best grip for the average hand. Since the pistol sits very low in the hand, it has an excellent balance and instinctive pointing ability.

The Model 51 has a full set of safety features. It has a grip safety, a thumb safety, and a magazine safety. The grip safety has a three-fold job, for it acts as a cocking indicator, since it pro-



**1** To field-strip the Remington, first remove the magazine and empty the chamber. Then push the slide (1) back far enough to align the cut in the slide with the head of the barrel lock pin (44). Push on the end of the pin to start it and pry it out the rest of the way with a screwdriver or the magazine floorplate tip.

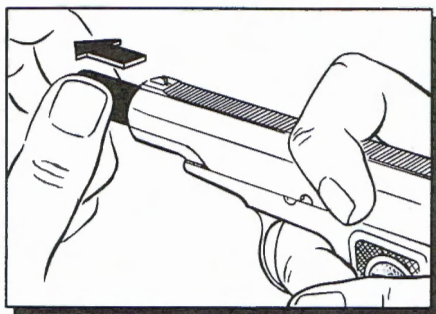
## LEGEND

- |                               |                            |
|-------------------------------|----------------------------|
| 1. Slide                      | 25. Trigger spring         |
| 2. Cocking roll pin           | 26. Trigger spring plunger |
| 3. Cocking roll               | 27. Magazine lock          |
| 4. Extractor                  | 28. Magazine lock spring   |
| 5. Breech bolt                | 29. Magazine lock follower |
| 6. Firing pin spring          | 30. Ejector                |
| 7. Firing pin                 | 31. Ejector spring         |
| 8. Hammer                     | 32. Sear lock lever        |
| 9. Mainspring rod pin         | 33. Sear lock              |
| 10. Mainspring rod            | 34. Sear lock spring       |
| 11. Grip safety               | 35. Magazine               |
| 12. Mainspring plug           | 36. Grip safety pin        |
| 13. Plug retaining pin        | 37. Sear lock lever pin    |
| 14. Mainspring                | 38. Sear lock pin          |
| 15. Mainspring plunger        | 39. Stock plate (2)        |
| 16. Sear                      | 40. Left-hand stock        |
| 17. Disconnect lever          | 41. Sear pin               |
| 18. Disconnect spring plunger | 42. Safety lever           |
| 19. Disconnect spring         | 43. Ejector pin            |
| 20. Disconnect pin            | 44. Barrel lock pin        |
| 21. Disconnect                | 45. Receiver               |
| 22. Trigger                   | 46. Barrel                 |
| 23. Trigger pin               | 47. Action spring bushing  |
| 24. Trigger lever             | 48. Action spring          |

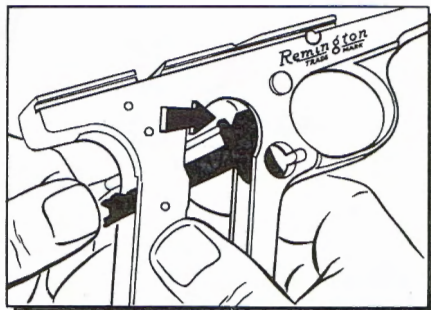
trudes from the grip only when the gun is cocked. It also acts as a hold-open device. When the slide is pulled all the way back, and the grip safety is not interfered with, the disconnect is held up in front of the breech bolt, preventing the slide running forward. When the grip safety is squeezed, it allows the disconnect to drop out of the path of the slide. If there is a cartridge in the magazine, it will chamber it but will not fire it until the trigger is pulled.

Unlike most common pocket automatics, the gun is not a true blowback. It is operated by cartridge setback or by what is sometimes called impinging action. The breech bolt is separate and not a fixed part of the slide. It is locked into a recess in the frame but can recoil in a straight line for a short distance. When the cartridge is fired, the bolt recoils at a high speed, striking the slide. The slide moves to the rear under the impact, lifting the breech bolt free of the locking recess in the frame. It returns during counter recoil, chambering the incoming round, and drops the

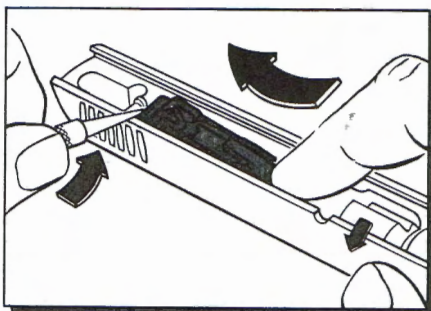




**2** Pull back the slide again as shown, and at the same time pull the muzzle of the barrel forward. This will release the slide and barrel (46) from the receiver (45). To reassemble, push the slide assembly back on the receiver until it is stopped by the disconnecter (21). Pull the trigger, depress the disconnecter, and the slide can be pushed into final position



**3** The trigger (22) will come out easily during disassembly, but putting it back requires the aid of a small screwdriver. Put the trigger assembly into the frame as shown. Then depress the trigger lever (24) until it can pass under the top surface of the trigger opening in the receiver



**4** To remove the breech bolt (5) and firing pin (7), pull the barrel forward about  $\frac{1}{8}$  inch. Rotate it counterclockwise until it locks into the slide. Push the breech bolt to the rear and lift up the end as shown. Lift it free of the slide and the firing pin, and the firing pin spring (6) will drop down through the barrel

breech bolt back into its locking recess in the frame. This system makes the gun more pleasant to shoot than straight blowback designs.

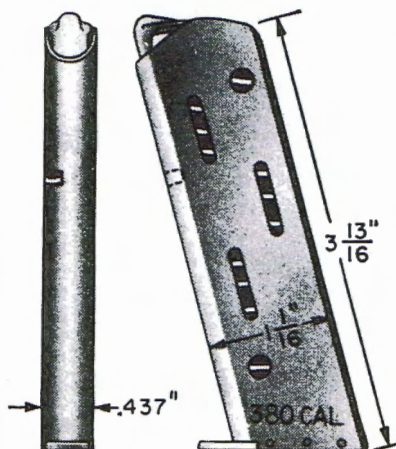
Model 51 pistols were first marketed around 1918 and discontinued during 1935. They were made in .32 and .380 ACP calibers, and were well made and well finished. It is interesting to note that even with its outstanding design, a Model 51 could be purchased for \$15.75 when the Colt Pocket Model sold for \$20.50 and the Smith & Wesson .32 automatic for \$33.50. —

Remington  
Model 51 Auto



## PISTOL MAGAZINES

One of a series



The Remington Pocket Pistol Model 51 is one of the best which has been produced in America. It is extremely compact and well designed, with a grip second to none in its class. The delayed blowback action and the gun's natural pointing abilities make it a pleasure to shoot. Model 51's were made in .32 and .380 cal. The only drawback is the rather awkward method of takedown, and the fact that the sights are rather small and difficult to find in a hurry.



Remington magazines are always marked with their caliber, either .32 or .380. They can also be identified by the convex backstrap on the rear edge of the magazine. The long observation holes in the left side are another guide point.



In keeping with the general excellence of design, the magazine follower is a carefully formed piece of pressed metal. Another point of recognition is the rectangular magazine catch hole in the front edge.—E. J. HOFF-SCHMIDT

## Try It This Way

### Measuring headspace

To measure headspace in rifles which use ammunition with rimmed cartridges (not rimless), I cut a disc of soft lead the same diameter as the cartridge rim and .005" to .010" thicker, place this in position on the breechblock face, and close the action fully. The squeezed edges of the lead disc then have the headspace thickness, which is readily measured with a micrometer caliper.—CHARLES M. BUSH

### Epoxy resin and Plastic Wood

When building up handgun stocks with Plastic Wood to improve fit, I find that the completed job seldom looks finished and that the Plastic Wood has a tendency to crumble and sometimes break off completely. Covering this with an epoxy resin insures a much more permanent and finished looking stock. Since this resin has tremendous adhesive characteristics, small pieces of wood may be glued directly to the stock and the resin used to fill in.—COL. HENRY L. PHILLIPS

### Drilling hard steels

Hard steels can be drilled with inexpensive carbon-steel drills, specially hardened at the tip by quenching in mercury from a cherry red heat (1400°-1500° F.). Do not draw after hardening. This is applicable to taps, on which only the first few threads should be hardened. I was able to raise the hardness to 65 Rockwell C, about 5 points higher than the usual high-speed steel. For maximum hardness the mercury can be surrounded by dry ice. Caution—because of mercury fumes quench in good ventilation or out of doors.—FRED P. FALTERSACK

### Carve a set of pattern grips

The pistol shooter carving his first set of custom handgrips cannot forget that a good pair of walnut blanks costs in the neighborhood of \$5. He can allay his misgivings if he will first carve a set of pattern grips from clear pine or balsa blocks. Either of these materials works with ease, and, if a mistake is made, it can be corrected in the final product.—MAJ. ROBERT A. IRELAND

### Bolt removal

Tight stock bolts are often difficult to remove with a screwdriver held in the hands. Clamp the screwdriver vertically in a vise. The stock is then turned with the hands to loosen the bolt. Obstinate bolts may require 2 men to loosen.—JOHN KRILL

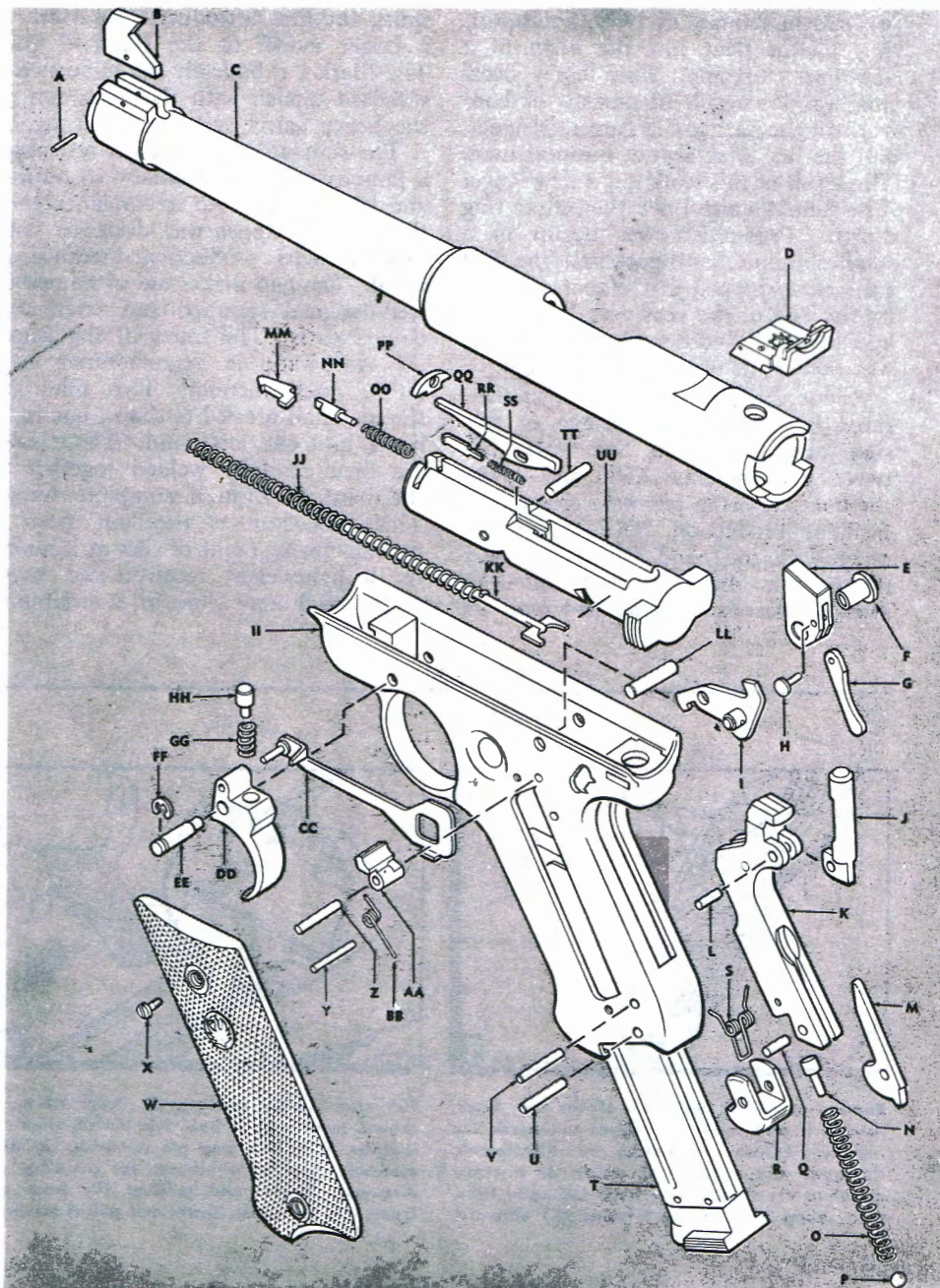
### Use for pipe cleaners

Screw slots and crevices in firearms often cannot be properly reached for cleaning by usual means. A pipe cleaner will often solve the problem. It is especially effective on muzzle-loader nipples and tubes. It can be used either dry or dipped in a cleaning solution.—RICHARD CHAMBERLAIN



## Legend

- |                                |                            |
|--------------------------------|----------------------------|
| A—Front sight retaining pin    | X—Grip screw               |
| B—Front sight blade            | Y—Sear spring stop pin     |
| C—Barrel and receiver assembly | Z—Sear pivot pin           |
| D—Micro rear sight             | AA—Sear                    |
| E—Hammer                       | BB—Sear spring             |
| F—Hammer bushing               | CC—Disconnecter            |
| G—Hammer strut                 | DD—Trigger                 |
| H—Hammer strut pin             | EE—Trigger pivot pin       |
| I—Safety catch                 | FF—Trigger pin lock washer |
| J—Bolt stop pin                | GG—Trigger spring          |
| K—Main spring housing          | HH—Trigger spring plunger  |
| L—Bolt stop pivot pin          | II—Frame                   |
| M—Housing latch                | JJ—Recoil spring           |
| N—Main spring plunger          | KK—Recoil spring guide pin |
| O—Main spring                  | LL—Hammer pivot pin        |
| P—Detent ball                  | MM—Extractor               |
| Q—Housing latch pivot pin      | NN—Extractor plunger       |
| R—Magazine catch               | OO—Extractor spring        |
| S—Magazine catch spring        | PP—Recoil spring support   |
| T—Magazine                     | QQ—Firing pin              |
| U—Magazine catch pivot pin     | RR—Rebound spring support  |
| V—Magazine catch stop pin      | SS—Rebound spring          |
| W—Left hand grip               | TT—Firing pin stop         |
|                                | UU—Bolt                    |



# THE RUGER .22 AUTOMATIC

By E. J. Hoffschmidt



LATE in January of 1949, Southport, Connecticut saw the birth of a new gun company. This happy occasion was the result of months of hard work on the part of Bill Ruger, designer, and the late Alex Sturm, business man. The result of this work was a new Ruger .22 automatic pistol of rather interesting design. Production was begun in a small shop in Southport and the first guns were shipped in October of 1949. By the end of the year over 1,100 guns had been produced and the company was well on its way in the gun field.

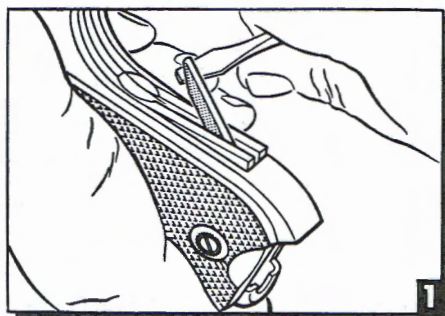
About 2,500 pistols were manufactured before the first change of any significance was made. Somewhere between guns number 2,500 and 2,800, the bolt and firing pin were changed to facilitate production. This change did away with the hand fitting that was necessary in the early guns. In 1950 after the standard model had won its

spurs, the firm introduced the Mark 1, a target model of the standard gun. The Mark 1 is basically the same as the standard model, with the exception of the heavy barrel and the target sights.

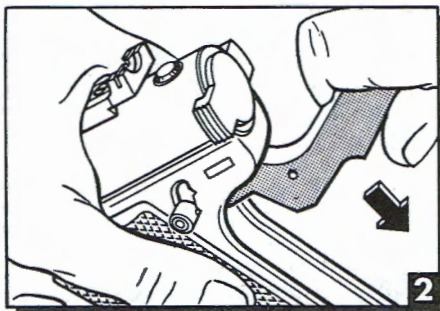
The standard model Ruger resembles a famous military automatic in outline and balance, but the resemblance ends there. The Ruger was designed with modern mass production methods in mind. The gun makes use of numerous well-designed stamped and screw machined parts. The frame of the Ruger .22 Automatic is manufactured in a rather novel manner. Two sides are stamped and pressed to shape, one right hand, and one left hand. These sides are then carefully welded together at the joint to form a complete frame. This procedure is excellent from a manufacturing point of view as it makes for a lightweight receiver and keeps costly machinery time to a minimum;

but this procedure also has a drawback. Care must be taken when holding the receiver in a vice, for repairs. Do not apply too much pressure to areas on the receiver that lack cross numbers. Due to the manufacturing procedure used on the Ruger, the barrel and receiver are considered as an assembly. The barrel is screwed tightly against the face of a blank receiver. The barrel and receiver assembly is then machined as a unit.

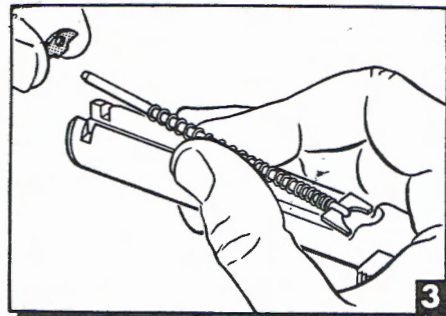
The Ruger .22 is a blow-back operated automatic pistol. It has proved itself to be an accurate and reliable weapon as well as a target gun. The take-down procedure is simple but a few points must be observed when stripping the gun; be sure the hammer is down resting on the firing pin and the hammer strut (G) is in position to engage the main spring plunger (N) in the main spring housing (K). If strut is not in place, bolt cannot be drawn back. ♦♦♦



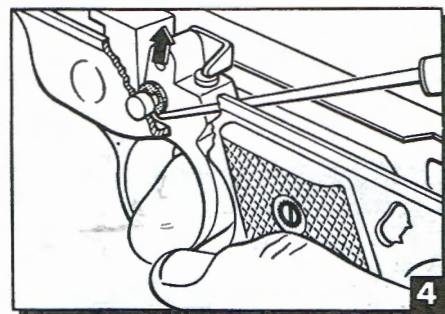
Remove magazine, pull bolt all the way back, release it and snap the trigger to uncock the hammer before attempting to disassemble the gun. Use a piece of plastic or a screw driver to pry the housing latch (M) open fully, then swing main spring housing (K) outward.



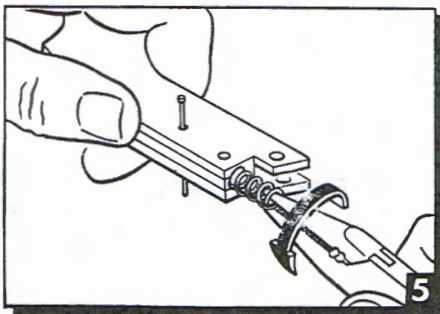
Pull main spring housing (K) down hard, as shown, to disengage bolt stop pin (J) from the receiver. With bolt stop pin removed, the bolt assembly may be withdrawn for cleaning. To disengage barrel and receiver (C) from the frame (H), grasp the barrel and pull it forward



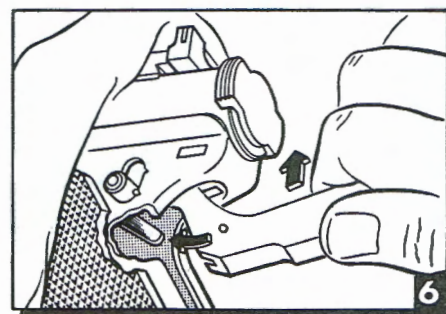
Assembly of bolt requires care, as recoil spring (JJ) is heavily compressed. It can easily be pried out under control, but to replace it hold the recoil spring compressed on spring guide pin (KK), as shown. Slip recoil spring support (PP) on the spring guide and ease it down into bolt.



All pins except the staked pins in the main spring housing and the trigger pivot pin (EE) can easily be removed. Before removing the trigger pin, we must pry out the lock washer (FF) that holds the pin in place. Use a long thin rod to pry it upward. The pin can now be pushed out from left to right.



The simplest way to replace the main spring (O) or main spring plunger (N) without special tools is to drill an .062" hole through the main spring housing (K). Insert a wire nail and wind the spring in around it, below the surface, to support the detent ball (P) while pinning the housing latch (M) into place.



To reassemble, replace bolt. Lay receiver on the frame, ends flush. Push receiver back until it locks into the frame. Hold gun so that hammer rests on firing pin; push the bolt stop pin up through bolt and receiver. Swing main spring housing (K) down to engage the hammer strut. Snap the housing latch shut.



# EXPLODED VIEWS:



## RUGER BEARCAT

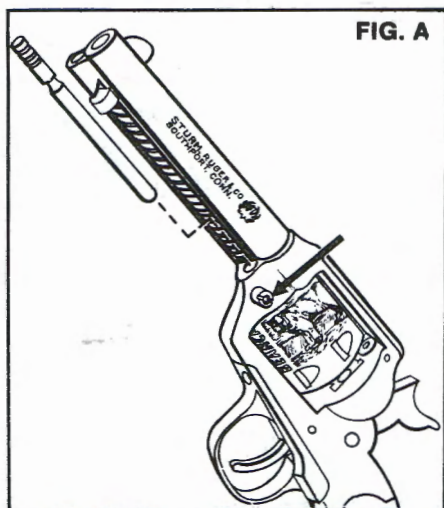
BY STEPHEN K. VOGEL

INTRODUCED in 1958, the diminutive Bearcat revolver was a significant departure from earlier Ruger single-action models. Blackpowder enthusiasts will immediately recognize the similarity between the Bearcat's one-piece cylinder/grip frame construction and that of the 1861 Remington percussion revolver. The lockwork of the Bearcat is, however, typically Ruger and incorporates the music wire coil springs and Ruger patent coil spring/plunger cylinder latching mechanism found in the Single-Six and Blackhawk revolvers. Designed for use with standard .22 rimfire cartridges, the Bearcat revolver is dimensioned accordingly.

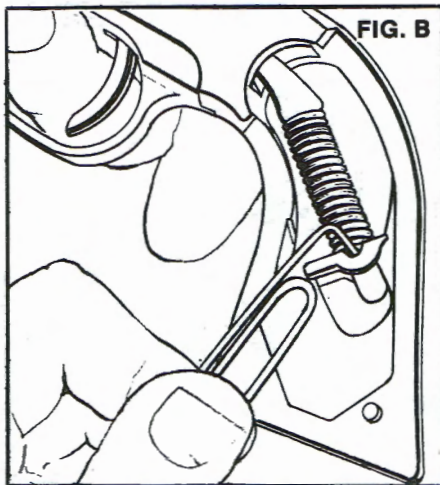
During its 15-year (1958 to 1973) production history, the design of this revolver remained virtually unchanged. The major

difference between the 1958 Bearcat and its final evolution, the Super Bearcat, lies in the frame material. The original Bearcat frame was made of aircraft-quality aluminum. The Super Bearcat frame was constructed of a chrome molybdenum steel alloy.

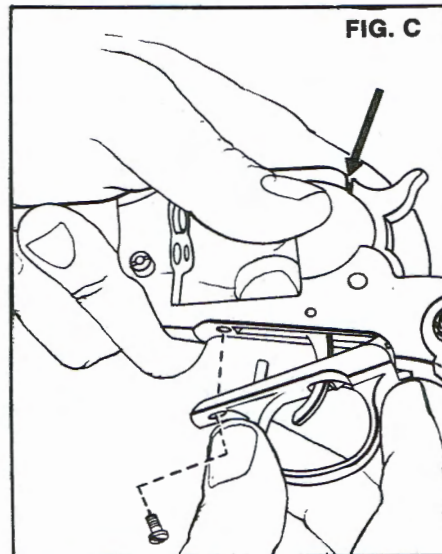
Disassembly of the Bearcat revolver is simple and straightforward. With the exception of steps which require the compression of springs (i.e., removal and replacement of the trigger guard), no force is required to take apart or reassemble these guns. To avoid damage to the screws or finish (and a substantial reduction in collector value), properly fitting screwdrivers must be used.



1. Check that revolver is unloaded by retracting hammer (16) two clicks to loading notch, opening loading gate (12) and, while manually rotating cylinder (36), examining each chamber.  
2. Depress base pin latch body (7-arrow) and remove base pin (10) and cylinder (36). (Fig. A)



3. Remove ejector housing screw (4), ejector housing (3), rod assembly (5) and spring (6).  
4. Remove grip panels (40). Bring hammer (16) to full cock and insert small wire or pin in hole in hammer strut (18). Depress trigger (32) and push hammer fully forward. Do not remove hammer strut (18) and hammer spring (19) at this time. (Fig. B)

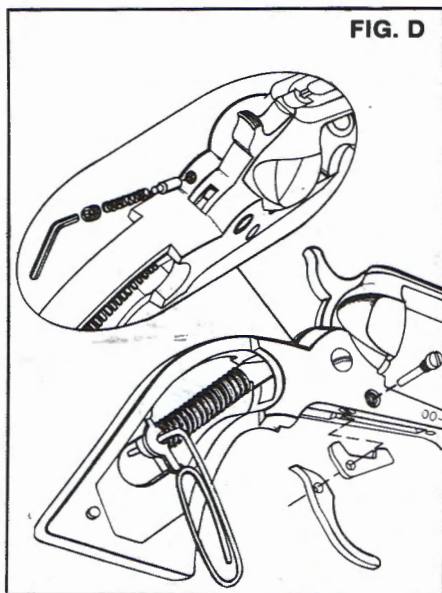
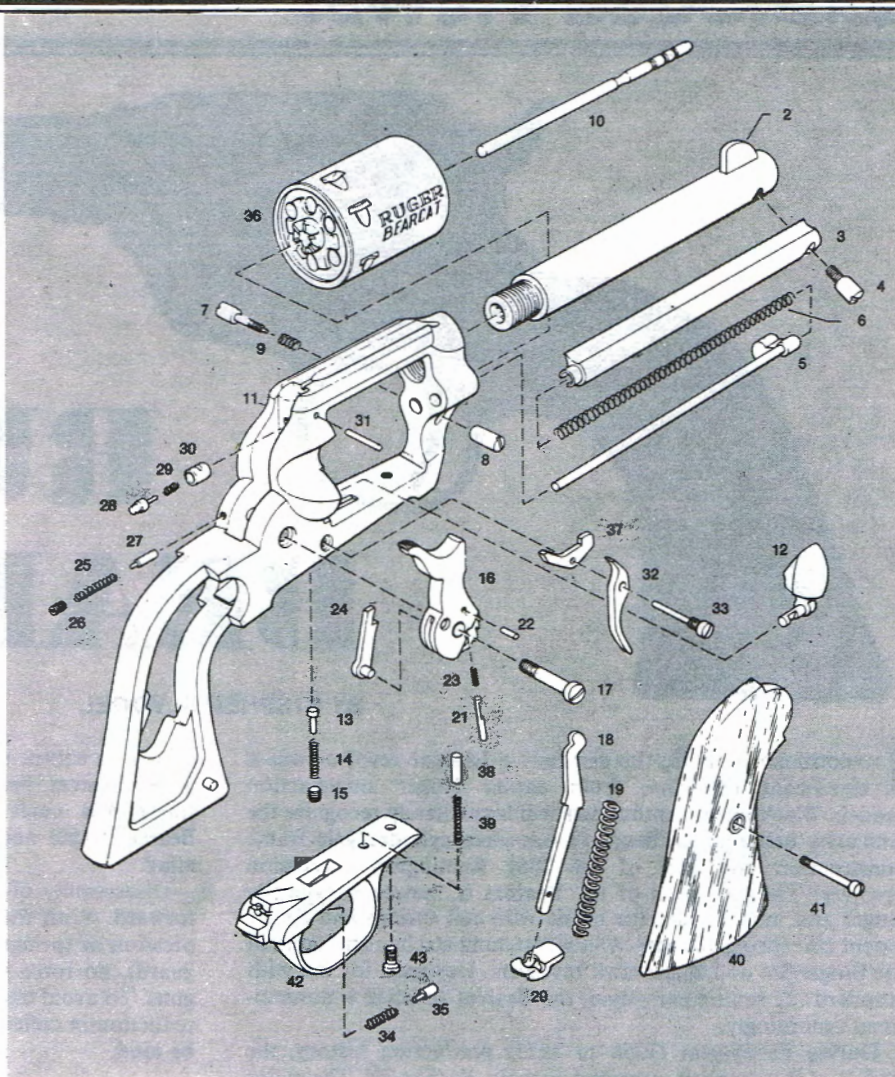


5. Retract the hammer two clicks, remove trigger guard screw (43) and pull trigger guard (42) down and forward until free of trigger. Note position of trigger (32), cylinder latch spring (39) and plunger (38). (Fig. C)

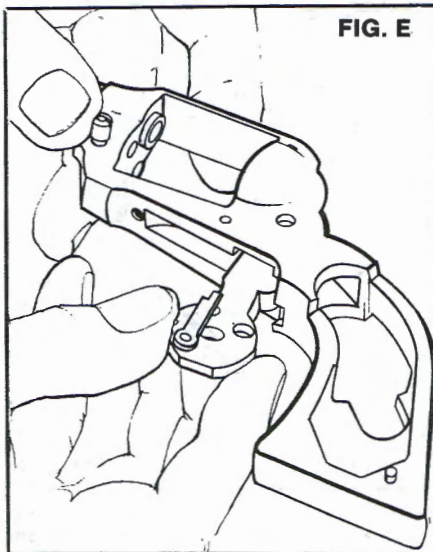


### Parts Legend

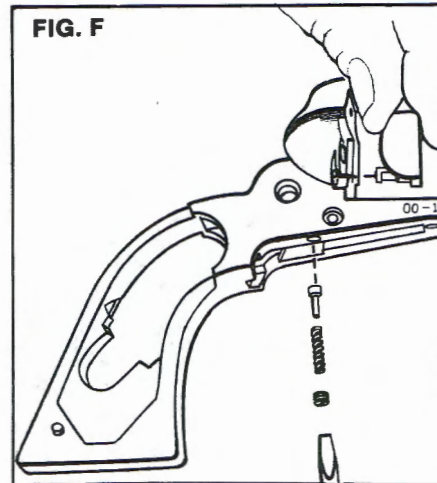
- |                          |                               |
|--------------------------|-------------------------------|
| 1. Barrel                | 22. Hammer plunger pin        |
| 2. Front sight           | 23. Hammer plunger spring     |
| 3. Ejector housing       | 24. Pawl                      |
| 4. Ejector housing screw | 25. Pawl spring               |
| 5. Ejector rod assembly  | 26. Pawl screw                |
| 6. Ejector spring        | 27. Pawl spring plunger       |
| 7. Base pin latch body   | 28. Firing pin                |
| 8. Base pin latch nut    | 29. Firing pin rebound spring |
| 9. Base pin latch spring | 30. Recoil plate              |
| 10. Base pin             | 31. Recoil plate cross pin    |
| 11. Frame                | 32. Trigger                   |
| 12. Gate assembly        | 33. Trigger pivot             |
| 13. Gate detent plunger  | 34. Trigger spring            |
| 14. Gate detent spring   | 35. Trigger spring plunger    |
| 15. Gate retaining screw | 36. Cylinder                  |
| 16. Hammer               | 37. Cylinder latch screw      |
| 17. Hammer pivot         | 38. Cylinder latch plunger    |
| 18. Hammer strut         | 39. Cylinder latch spring     |
| 19. Hammer spring        | 40. Grip panel                |
| 20. Hammer spring seat   | 41. Grip panel screw          |
| 21. Hammer plunger       | 42. Trigger guard             |
|                          | 43. Trigger guard screw       |



6. With 1/16" hex wrench, remove pawl screw (26), spring (25) and plunger (27) (Fig. D insert). Remove trigger pivot (33), trigger (32) and cylinder latch (37). (Fig. D)



7. Remove the hammer pivot (17) and (without removing the pin or clip holding them together) take from the grip frame the hammer strut (18), spring (19) and seat (20) assembly. Remove hammer (16) and pawl (24). (Fig. E)

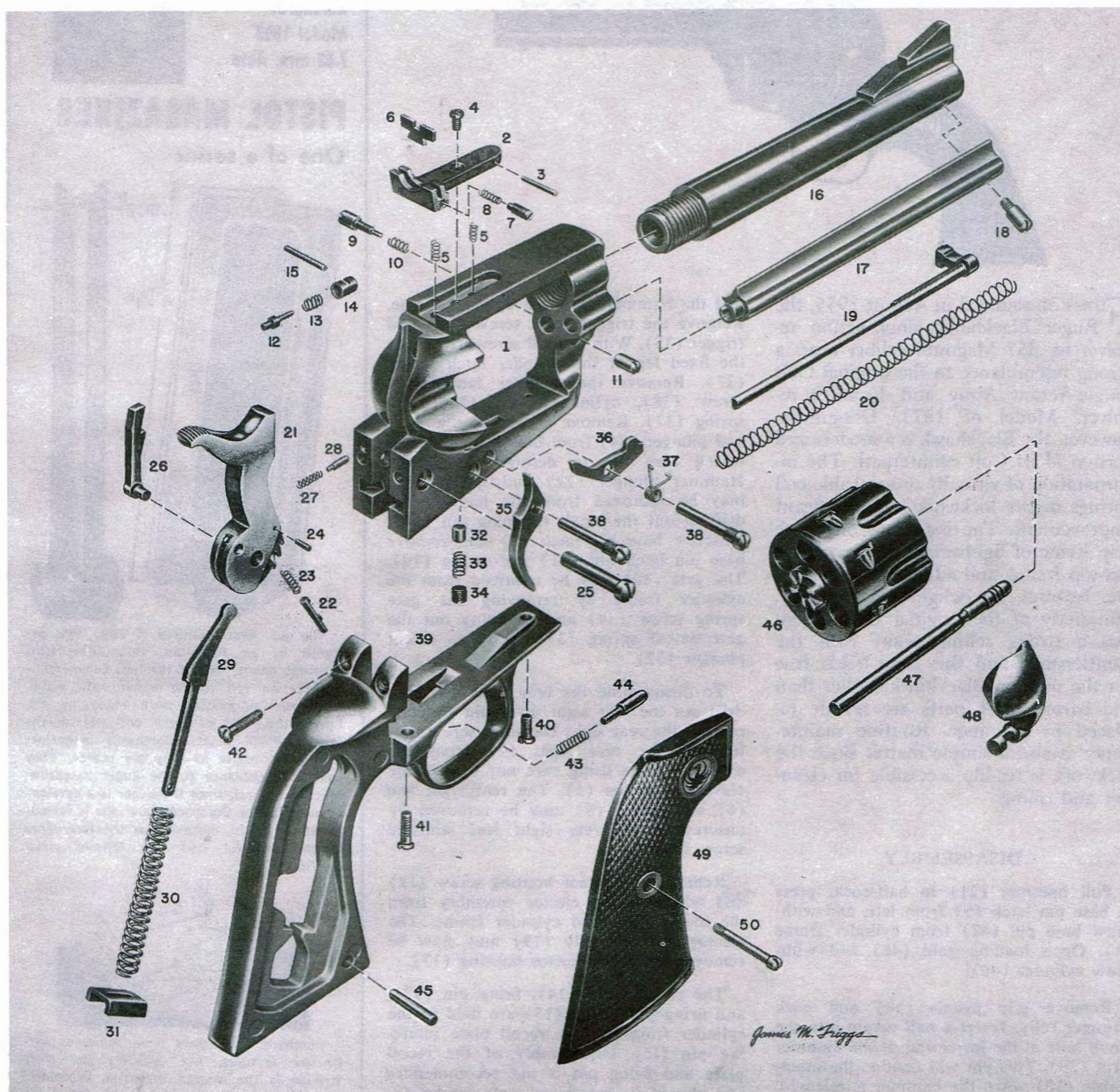


8. Remove gate retaining screw (15), gate detent spring (14) and gate detent plunger (13). This will free the gate assembly (12) which can be pulled forward from its seat in the frame. (Fig. F)

Further disassembly should be attempted only by a competent gunsmith, and reassembly is accomplished by reversing the above procedures.



# Ruger Blackhawk .357



## LEGEND

1. Cylinder frame
2. Rear sight
3. Rear sight pivot pin
4. Rear sight elevation screw
5. Rear sight elevation springs (2)
6. Rear sight leaf
7. Rear sight leaf (windage) screw
8. Rear sight leaf spring
9. Base pin latch
10. Base pin latch spring
11. Base pin latch nut
12. Firing pin
13. Firing pin spring
14. Recoil plate
15. Recoil plate retaining pin
16. Barrel

17. Ejector housing
18. Ejector housing screw
19. Ejector rod assembly
20. Ejector spring
21. Hammer
22. Hammer plunger
23. Hammer plunger spring
24. Hammer plunger retaining pin
25. Hammer pivot screw
26. Pawl
27. Pawl spring
28. Pawl spring plunger
29. Hammer strut
30. Mainspring
31. Mainspring seat
32. Gate detent plunger
33. Gate detent spring

34. Gate spring screw
35. Trigger
36. Cylinder latch
37. Cylinder latch spring
38. Trigger and latch pivot screws (2)
39. Grip frame
40. Front grip frame screw
41. Lower grip frame screws (2)
42. Rear grip frame screws (2)
43. Trigger spring
44. Trigger spring plunger
45. Grip pin
46. Cylinder
47. Base pin
48. Gate
49. Grip panels (2)
50. Grip screw



# Revolver

By James M. Triggs



FIRST announced in August 1955, the Ruger Blackhawk single-action revolver in .357 Magnum caliber bears a strong resemblance to the original Colt Single-Action Army and Frontier revolver, Model of 1873. Designwise, however, the Blackhawk is a modernized version of its Colt counterpart. The incorporation of virtually unbreakable coil springs in the lockwork is a significant improvement. The ingenious one-piece grip frame of lightweight alloy, massive flat-top frame, and adjustable rear sight are features to delight any shooter. Simplicity of the original Colt design was a strong selling point with the frontiersman and the same holds true for the modern Blackhawk. Other than the barrel, most parts are readily replaced by the user. Routine maintenance is also a simple matter since the lockwork is readily accessible for cleaning and oiling.

## DISASSEMBLY

Pull hammer (21) to half-cock, press in base pin latch (9) from left, and withdraw base pin (47) from cylinder frame (1). Open loading gate (48) and withdraw cylinder (46).

Remove grip panels (49) and cock hammer fully. Insert a nail or pin into the small hole at the lower end of the hammer strut (29). This pin will confine the main-spring (30) when the hammer is released. Remove the five grip frame screws (40, 41, 42) which fasten the grip frame (39) to the cylinder frame. In separating the grip frame from the cylinder frame, take care to prevent loss of the pawl spring (27) and plunger (28) which are located in a hole in the rear of the cylinder frame, adjacent to the upper left rear grip frame screw hole.

Remove the hammer pivot screw (25)

**JAMES M. TRIGGS**, a writer-illustrator of *Mamaronock, N. Y.*, has been a gun collector for 15 years.

and the hammer from the cylinder frame. Remove the trigger pivot screw (38) and trigger (35). With a small screwdriver free the fixed leg of the cylinder latch spring (37). Remove the cylinder latch pivot screw (38), cylinder latch (36), and spring (37). Remove trigger spring (43) and plunger (44) from hole in grip frame, taking care not to deform the spring. Hammer plunger (22) and spring (23) may be removed from the hammer by drifting out the small retaining pin (24). Unscrew base pin latch (9) and remove base pin latch nut (11) and spring (10). The gate (48) may be removed from the cylinder frame by removing the gate spring screw (34) and dropping out the gate detent spring (33) and gate detent plunger (32).

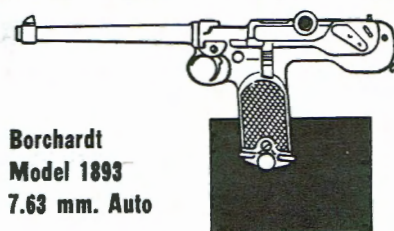
To disassemble the rear sight assembly drift out the rear sight pivot pin (3) and remove the rear sight elevation screw (4). Remove the rear sight (2) from the cylinder frame using care not to lose the elevation springs (5). The rear sight leaf (6) and spring (8) may be removed by unscrewing the rear sight leaf windage screw (7).

Remove the ejector housing screw (18) and withdraw the ejector assembly from the barrel (16) and cylinder frame. The ejector rod assembly (19) may now be removed from the ejector housing (17).

The recoil plate (14), firing pin (12), and firing pin spring (13) are held in the cylinder frame by the recoil plate retaining pin (15). Disassembly of the recoil plate and firing pin is not recommended and should be attempted only by an experienced gunsmith. Removal of the hammer plunger (22) and spring (23) from the hammer is likewise not recommended. Although the above is a complete stripping procedure, it should be emphasized that, due to the rugged simplicity of the Ruger design, such a complete dismantling is seldom if ever necessary.

Reassembly is accomplished in the reverse order.

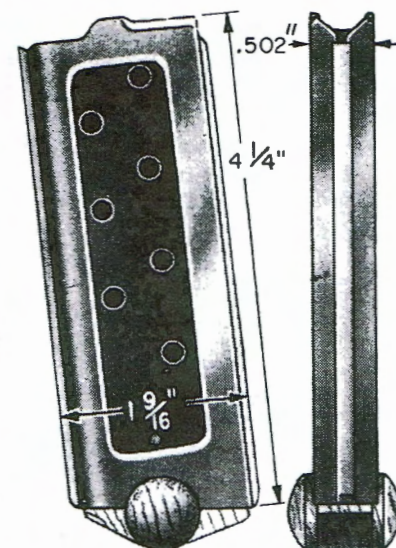
**Note**—Although many Blackhawk .357, .44 Magnum, and .22 Single-Six revolver parts are interchangeable, it is advised that the owner of any of these three guns consult the Ruger factory parts list when ordering parts.



**Borchardt  
Model 1893  
7.63 mm. Auto**

## PISTOL MAGAZINES

One of a series



The gun, first produced in 1893, was designed by an American, Hugo Borchardt. Although clumsy, it was the first commercially successful self-loading or automatic pistol. Borchardt automatics were made by the Loewe Arms firm of Berlin and later at the famous DWM plant. Borchardt magazines are as distinctive as they are scarce. They bear a resemblance to the Luger magazine, which is natural, since the Luger is a development of it. The Borchardt cartridge is famous in its own right, since it was the forerunner of the powerful 7.63 mm. Mauser pistol cartridge.



Borchardt magazines have numerous distinctive features, but probably the most striking is the wooden magazine floorplate, with its large convex buttons to aid in its removal from the gun. The magazine is also a good deal wider than the average pistol magazine.



The follower is different from any other common magazine in that it is concave and fits around the base of the cartridge. Another striking feature is the large stiffener and guide rib on the front and rear surfaces.

—E. J. HOFFSCHMIDT.

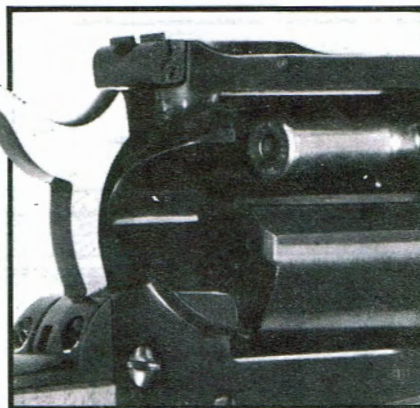




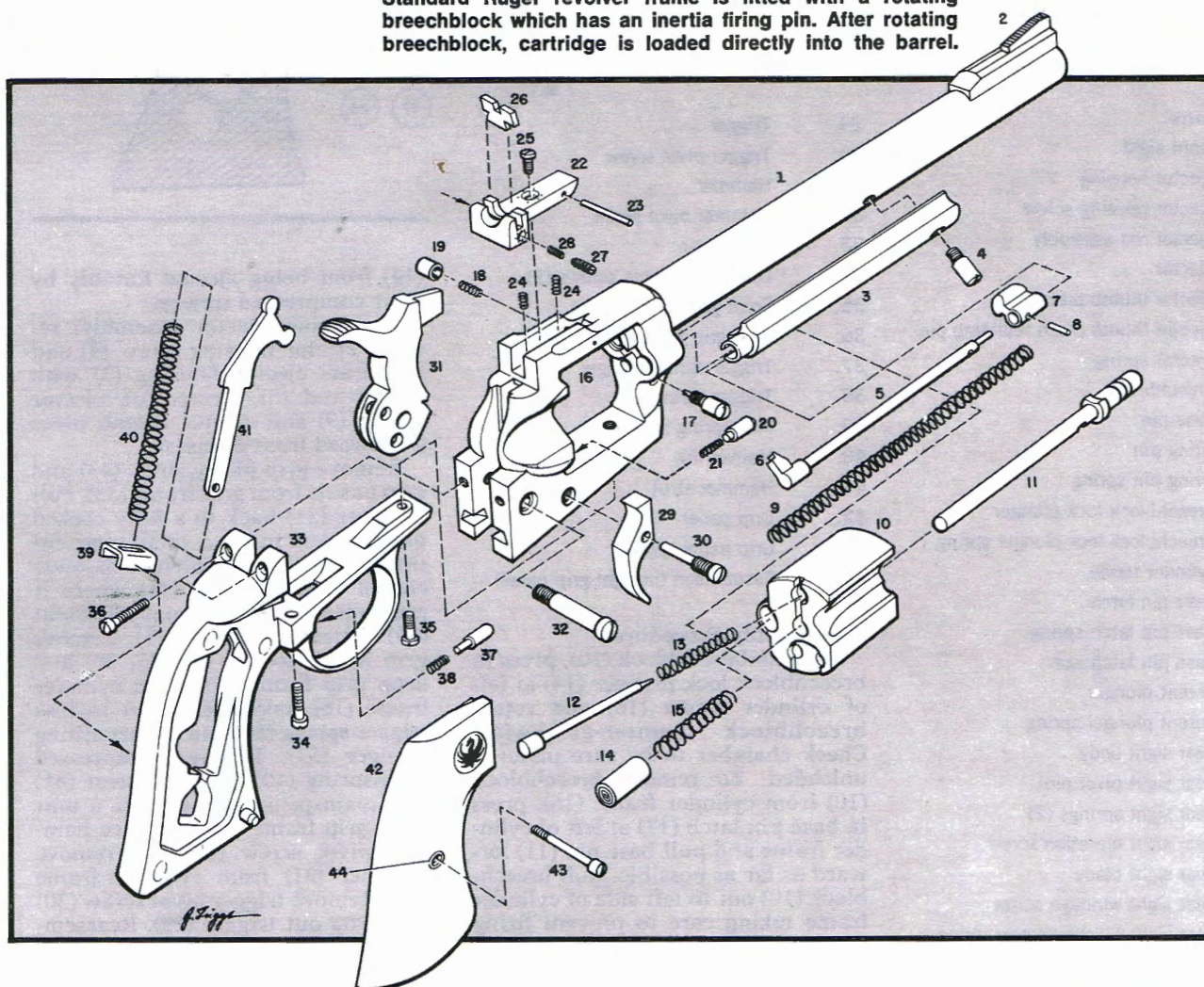
# RUGER'S HAWKEYE

BY JAMES M. TRIGGS

RUGER introduced the Hawkeye revolver in 1963 in response to the upsurge in handgun hunting. Desiring an inexpensive entry into the hunting handgun market, Ruger modified a single-action revolver by installing a latched rotating breechblock with an internal firing pin. The Hawkeye was chambered for the .256 Win. Mag. Cartridge. The 8½" barrel was factory drilled and tapped for a scope sight. Although the Hawkeye was well made, neither it nor the cartridge gained much popularity, and the revolver was discontinued the year following its introduction. ■

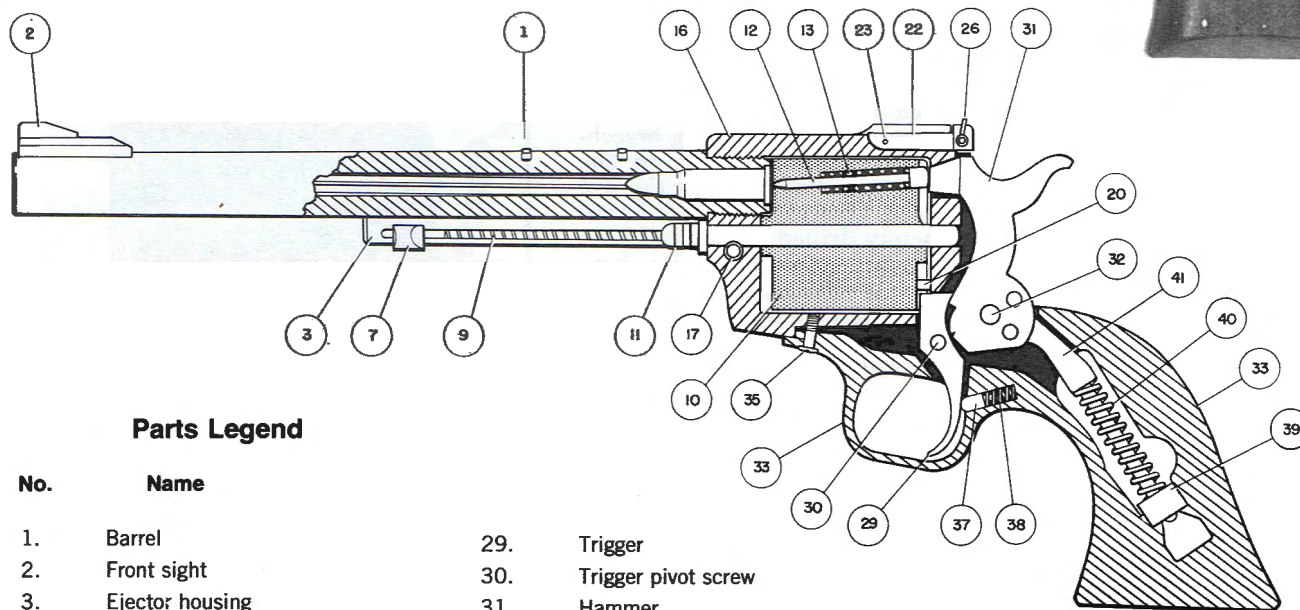


Standard Ruger revolver frame is fitted with a rotating breechblock which has an inertia firing pin. After rotating breechblock, cartridge is loaded directly into the barrel.





# Single Shot



## Parts Legend

No.	Name	No.	Name
1.	Barrel	29.	Trigger
2.	Front sight	30.	Trigger pivot screw
3.	Ejector housing	31.	Hammer
4.	Ejector housing screw	32.	Hammer pivot screw
5.	Ejector rod assembly	33.	Grip frame
6.	Ejector	34.	Lower grip frame screws (2)
7.	Ejector thumb piece	35.	Front grip frame screw
8.	Ejector thumb piece retaining pin	36.	Rear grip frame screws (2)
9.	Ejector spring	37.	Trigger spring plunger
10.	Breechblock	38.	Trigger spring
11.	Base pin	39.	Mainspring seat
12.	Firing pin	40.	Mainspring
13.	Firing pin spring	41.	Hammer strut
14.	Breechblock lock plunger	42.	Grip panel
15.	Breechblock lock plunger spring	43.	Grip panel screw
16.	Cylinder frame	44.	Escutcheon (in right grip panel)
17.	Base pin latch		
18.	Base pin latch spring		
19.	Base pin latch nut		
20.	Detent plunger		
21.	Detent plunger spring		
22.	Rear sight body		
23.	Rear sight pivot pin		
24.	Rear sight springs (2)		
25.	Rear sight elevation screw		
26.	Rear sight blade		
27.	Rear sight windage screw		
28.	Rear sight windage screw spring		

### Disassembly Procedure:

To open breechblock (10), press in breechblock lock plunger (14) at left of cylinder frame (16) and rotate breechblock counter-clockwise. Check chamber to be sure pistol is unloaded. To remove breechblock (10) from cylinder frame (16), press in base pin latch (17) at left of cylinder frame and pull base pin (11) forward as far as possible. Roll breechblock (10) out to left side of cylinder frame taking care to prevent firing pin and breechblock lock plunger

(14) from being ejected forcibly by their compressed springs.

To remove ejector assembly, remove ejector housing screw (4) and withdraw ejector housing (3) with ejector rod (5), ejector (6), ejector spring (9) and ejector thumb piece (7) toward front of pistol.

Remove grip panel screw (43) and grip panels from grip frame (33). Pull hammer (31) back to a fully cocked position and insert a small close-fitting nail or pin through hole in lower end of hammer strut (41) where it protrudes below the mainspring seat (39). Release hammer (31). Remove grip frame screws (34, 35, 36) and drop grip frame (33) from cylinder frame (16), taking care not to lose trigger spring (38) and trigger spring plunger (37). Remove compressed mainspring (40), hammer strut (41) and mainspring seat (39) as a unit from grip frame (33). Remove hammer pivot screw (32) and remove hammer (31) from cylinder frame (16). Remove trigger pivot screw (30) and drop out trigger (29). Reassemble in reverse order.



# RUGER SECURITY-SIX REVOLVER

Illustrations by DENNIS RIORDAN  
Text by LUDWIG OLSON,

**T**HE Ruger Security-Six double-action revolver is the result of imaginative designing and modern production techniques. This solid-frame handgun with side-swing cylinder and simultaneous ejection was introduced in 1970. It is offered in .38 Special and .357 Magnum chamberings and with choice of fixed or adjustable target-style sights.

Trim, compact, and strong, this six-shot revolver with four-in. barrel weighs 33 ozs. unloaded and measures 9¼" long overall. It is also available with 2¾" and six-in. barrels. To quote the manufacturer: "It is a handsome, rugged holster revolver—compact in the overall, yet massive enough to properly be designated as a heavy duty revolver for the rigors of police and military service."

Among several desirable features of the Security-Six is that it can be disassembled easily for cleaning and lubrication without use of special tools. After turning out the grip screw with a cartridge rim, coin, or screwdriver, the grips, lockwork, and cylinder assembly can be removed. Except for windage- and elevation-adjustment screws in the rear sight of the target version, the only screw in this revolver is the grip screw.

Unlike most other handguns, the frame, crane, hammer, trigger, trigger guard, and several smaller parts of the Security-Six are produced from chrome-molybdenum steel investment castings. The barrel is a machined forging and the cylinder, which rotates to the left, is machined from bar stock. All springs are of durable coil type. The frame is not fitted with a sideplate as in many other revolvers. This aids strength.

Integral with the barrel are an ejector rod housing and a raised grooved barrel rib. Pinned to the front of the rib is a Baughman-style quick-draw front sight.

In pleasing contrast with the blued finish of the other metal parts, sides of the hammer and trigger are polished bright. The grips are oil-finished American walnut, each fitted with a small circular Ruger medallion of white metal. Cut checkering in a diamond-shaped area on the grips is nicely executed.

An excellent safety feature of this revolver is the system of transmitting the hammer blow to the spring-loaded

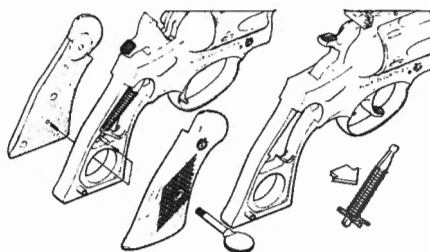


firing pin by means of a transfer bar. The hammer nose rests on the frame, and the transfer bar does not align with the firing pin until the trigger is fully to the rear. This prevents accidental firing should the gun be dropped with the hammer down, or should the hammer be struck when down and with the trigger forward.

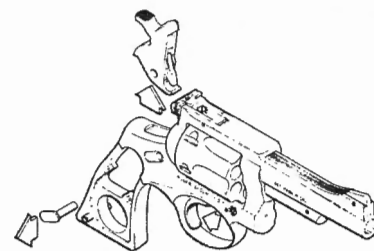
Another excellent safety feature is that the hammer cannot be cocked when the cylinder has been swung out, and the cylinder cannot be opened when the hammer is cocked. The cylinder assembly is released to swing out to the left by depressing the cylinder release button in the left recoil shield of the frame.

Handling and pointing qualities of this well-made reliable revolver are excellent, and its overall precision is very good. Its double-action trigger pull is satisfactorily smooth, without excessive buildup of resistance when the trigger pressure is increased. The single-action pull weighs approximately three lbs., and has very little creep.

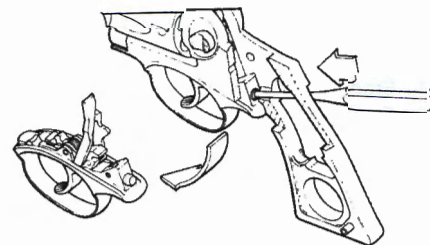
The Security-Six is well made and finished throughout, and its design shows considerable ingenuity. ■



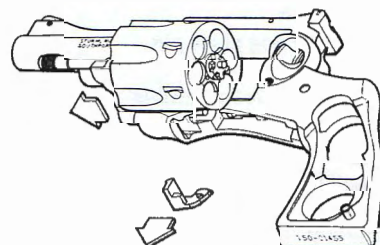
**1** Determine that revolver is unloaded before attempting disassembly. Unscrew grip screw (48) with coin or cartridge rim, and remove grips (42) (47). Cock hammer (24) with thumb. Insert disassembly pin (43), stored in left grip, through hole at bottom of hammer strut (19). Pull trigger, lower hammer with thumb, and remove mainspring/hammer strut assembly from grip frame.



**2** Pull trigger fully to rear and remove hammer pivot assembly (20). Keeping trigger fully depressed, roll hammer forward and lift straight upward from frame.

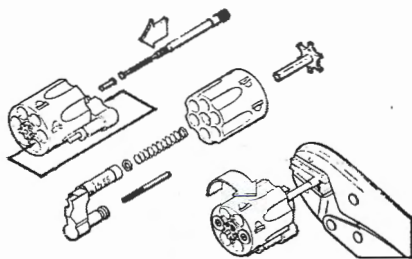


**3** Working through frame opening, depress trigger guard plunger (60) with punch. Pull rear of trigger guard (57) downward and remove from frame. In the field, trigger guard plunger may be depressed by rounded head of hammer strut.



**4** With the gun on its right side, press crane latch (37) and open cylinder (34). Draw cylinder/crane assembly forward and out of frame. Remove cylinder latch (38).



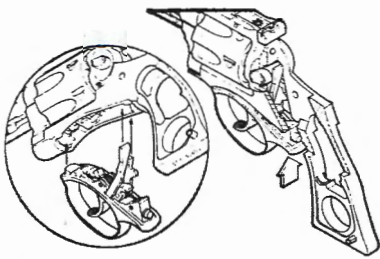


**5** If cylinder/crane assembly must be taken down, clamp knurled head of ejector rod (25) between wood blocks in vise or locking jaw pliers. Insert empty cartridge cases in opposite chambers and unscrew cylinder, turning clockwise. (Assembly is secured with left-hand threads.) When cylinder is fully unscrewed, squeeze crane (28) and cylinder together and remove from ejector rod. All parts may then be separated.

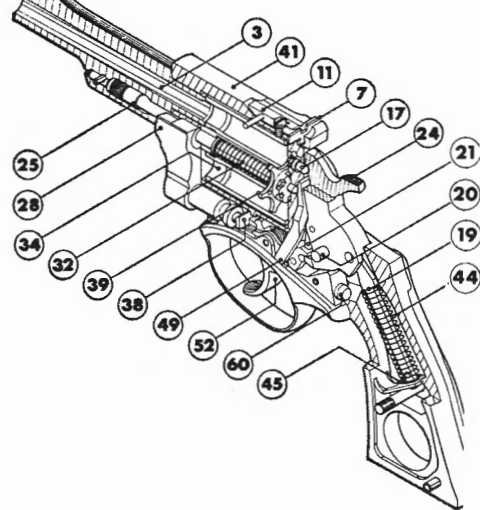
To reassemble cylinder/crane assembly, replace cylinder latch spring and plunger (29) (30) within crane pivot. Insert ejector rod washer (31) and ejector spring (32) within cylinder axle, making sure that the washer seats squarely upon its shoulder. Assemble ejector (39), cylinder, and crane. Slide center pin spring (26) over center pin rod (27) and insert through threaded end of ejector rod. Holding cylinder/crane assembly tightly together, replace center pin lock (33) and ejector rod assembly, turning ejector rod counter-clockwise to start its thread. Tighten in vise, as before.

#### PARTS LEGEND

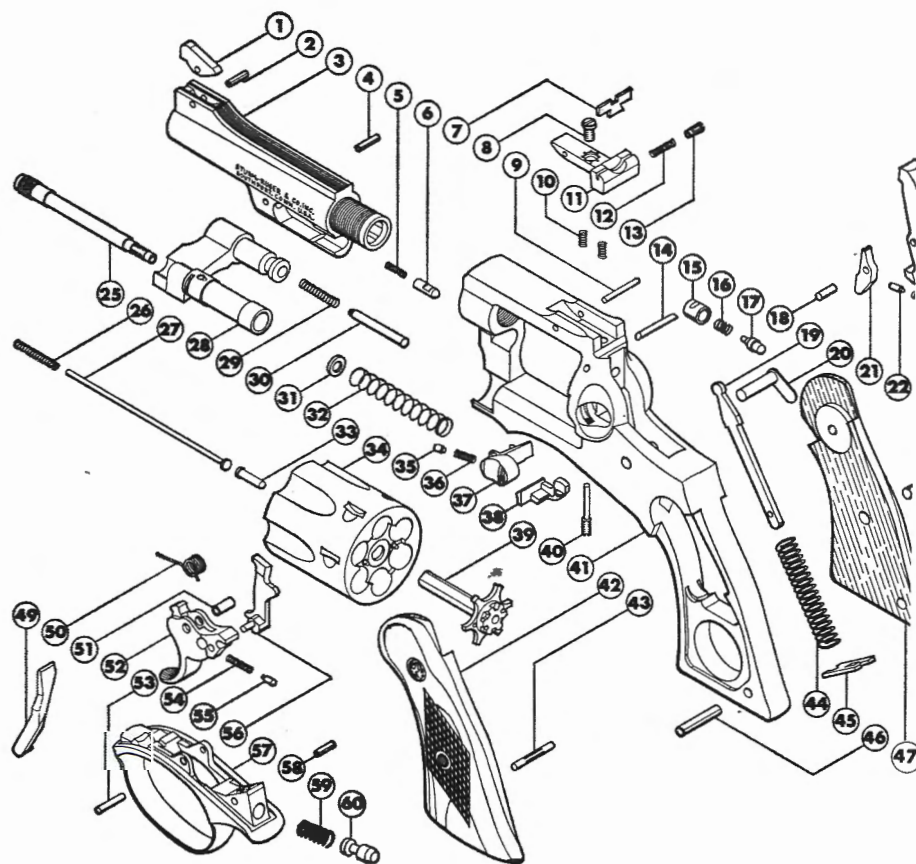
1. Front sight
2. Front sight cross pin
3. Barrel
4. Front latch cross pin
5. Front latch spring
6. Front latch
7. Rear sight blade
8. Rear sight elevation screw
9. Rear sight pivot pin
10. Rear sight elevation spring (2)
11. Rear sight
12. Rear sight windage spring
13. Rear sight windage screw
14. Recoil plate cross pin
15. Recoil plate
16. Firing pin rebound spring
17. Firing pin
18. Hammer dog pivot pin
19. Hammer strut
20. Hammer pivot assembly
21. Hammer dog
22. Hammer dog spring plunger
23. Hammer dog spring
24. Hammer
25. Ejector rod
26. Center pin spring
27. Center pin rod
28. Crane and crane pivot assembly
29. Cylinder latch spring
30. Cylinder latch plunger



**6** Assemble rest of gun in reverse order. When installing trigger guard assembly, locate transfer bar (49) and pawl (56) ahead of their internal frame shoulders, and enter lug at front of guard within its frame seat. Pivot assembly upward into contact with frame. Determine that transfer bar is situated to rear of internal crossbar of frame latch, and snap guard home. Pulling trigger will cycle cylinder, if assembly is correct. When replacing mainspring assembly, position mainspring seat (45) with offset hammer strut hole to rear.



**7** Cutaway indicates relationship between assembled parts. Gun is shown unloaded, with all springs at rest. Crane latch has been omitted for clarity; its crossbar would lie between center pin lock and transfer bar. Parts are number keyed to parts legend.



31. Ejector rod washer
32. Ejector spring
33. Center pin lock
34. Cylinder
35. Crane latch spring plunger
36. Crane latch spring
37. Crane latch
38. Cylinder latch
39. Ejector
40. Crane latch pivot

41. Frame
42. Grip panel (left) complete
43. Disassembly pin
44. Mainspring
45. Mainspring seat
46. Grip panel dowel
47. Grip panel (right) complete
48. Grip panel screw
49. Transfer bar
50. Trigger spring

51. Trigger bushing
52. Trigger
53. Trigger pivot pin
54. Pawl spring
55. Pawl plunger
56. Pawl
57. Trigger guard
58. Trigger guard plunger cross
59. Trigger guard plunger spring
60. Trigger guard plunger





By Thomas E. Wessel

IN early 1954 Sturm, Ruger & Co., Inc., Southport, Conn., began production of their Single-Six cal. .22 6-shot, single-action, rod-ejector revolver. Patterned after the famed Colt Single Action Army, the Ruger Single-Six mirrored the widespread demand for a high-quality, western-style, single-action revolver chambered for the economical cal. .22 rimfire cartridge. It was not designed for the competitive target shooter, but rather for informal plinking at targets of opportunity encountered afield or along the trap line. This is not to disparage the accuracy potential of the Single-Six as it is quite capable of target accuracy within the limita-

tions of its sights. The blade front sight is fixed, but the rear sight can be adjusted for windage by tapping it sideways in its dovetail slot. There is no elevation adjustment.

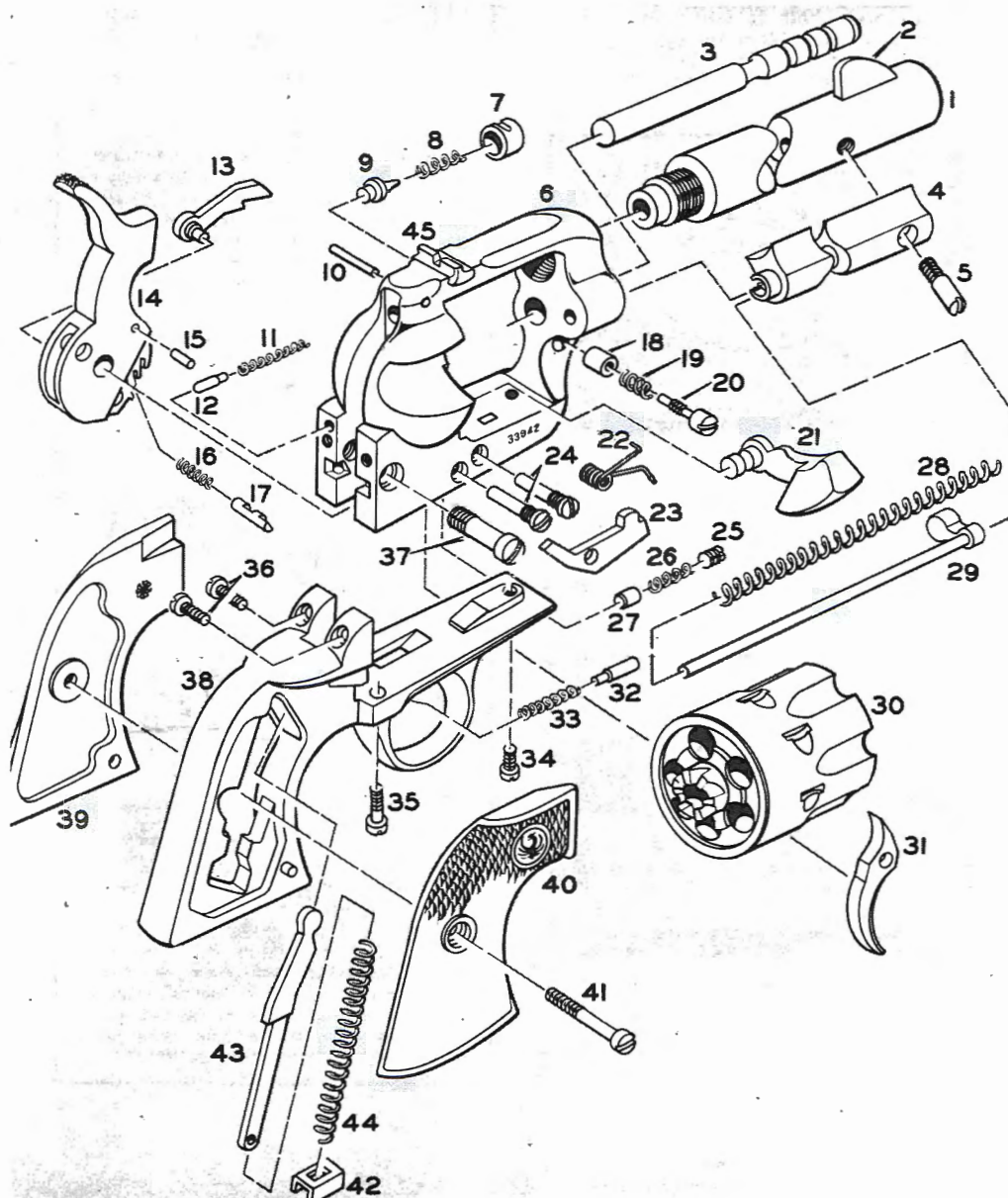
The salient design feature of the Single-Six is the use of virtually unbreakable music wire springs throughout the lock mechanism. Breakdowns through spring failure are thus unlikely.

In 1956 the Single-Six was brought out in lightweight version with cylinder, cylinder frame, and grip frame made of aluminum alloy. The regular steel model with 5½" barrel weighs 35 ozs., whereas the lightweight model in same barrel length weighs 13 ozs. less.

Also introduced in 1956 was a hand-engraved presentation model with grip frame of polished aluminum and all other major parts of blued steel. Grips were of varnished walnut.

Both lightweight and engraved pres-

## Ruger Single-Six Revolver



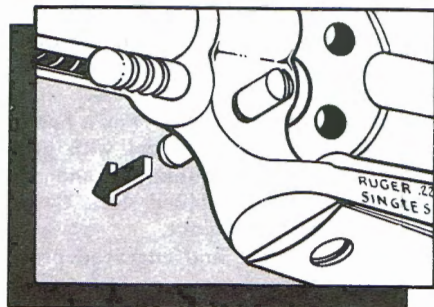
### Parts Legend

1. Barrel
2. Front sight
3. Base pin
4. Ejector housing
5. Ejector housing screw
6. Cylinder frame
7. Recoil plate
8. Rebound spring
9. Firing pin
10. Recoil plate pin
11. Pawl spring
12. Pawl plunger
13. Pawl
14. Hammer
15. Hammer plunger pin
16. Hammer plunger spring
17. Hammer plunger
18. Base pin nut
19. Base pin nut latch spring
20. Base pin latch
21. Gate assembly (contoured)
22. Cylinder latch spring
23. Cylinder latch
24. Pivot screw (2)
25. Gate spring screw
26. Gate detent spring
27. Gate detent plunger
28. Ejector spring
29. Ejector rod assembly
30. Cylinder
31. Trigger
32. Trigger plunger
33. Trigger spring
34. Grip frame screw, front
35. Grip frame screw, lower (2)
36. Grip frame screw, rear (2)
37. Hammer pivot screw
38. Grip frame
39. Grip panel, left
40. Grip panel, right
41. Grip panel screw
42. Mainspring seat
43. Hammer strut
44. Mainspring
45. Rear sight

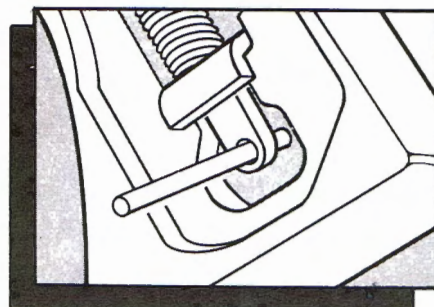


entation models have since been discontinued. The original steel model remains in the current line of Ruger revolvers and is available in 4 $\frac{5}{8}$ ", 5 $\frac{1}{2}$ ", and 9 $\frac{1}{2}$ " barrel lengths. Checkered hard-rubber grips are standard although varnished walnut grips are available at slight extra charge.

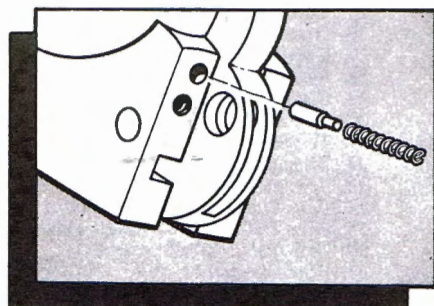
In 1959 the Single-Six, in 6 $\frac{1}{2}$ " barrel length only, was chambered for the new cal. .22 Winchester Magnum Rim-fire cartridge.



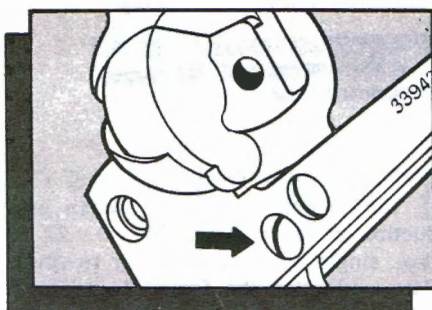
**1** To remove cylinder (30), first remove any cartridges, position hammer on loading notch, and open gate (21). Next, press base pin nut (18) on left side and withdraw base pin (3). Cylinder may now be removed from right side.



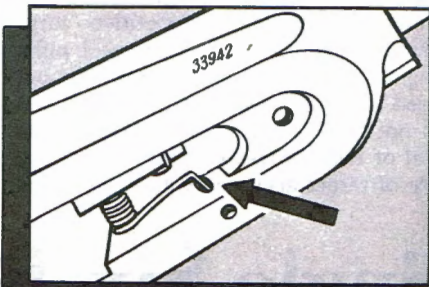
**2** To further disassemble, remove grip panel screw (41), and lift grip panels (39) and (40) away from grip frame (38). Bring hammer to full cock and insert nail or pin into small hole in lower end of hammer strut (43). Next, depress trigger and move the hammer forward. The nail will keep mainspring (44) compressed



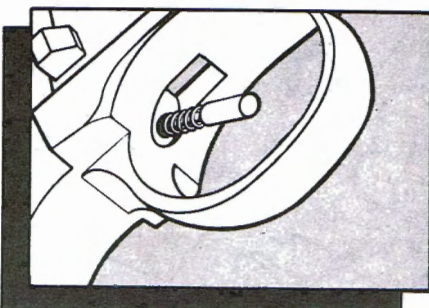
**3** Continue disassembly by removing the 5 screws—2 (35), 2 (36), and (34)—which hold grip frame to cylinder frame (6). In separating grip and cylinder frames, take care to prevent loss of pawl spring (11) and plunger (12). These parts are located in a hole drilled in left rear face of cylinder frame, adjacent to rear left grip frame screw hole



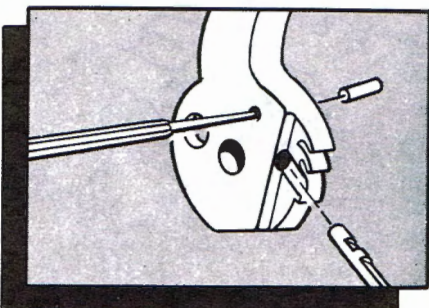
**4** Remove hammer pivot screw (37) and hammer. Remove trigger pivot screw (24-arrow) and trigger (31)



**5** With a small screwdriver, free fixed leg of cylinder latch spring (22) from its anchoring hole in left inside wall of cylinder frame. Remove cylinder latch pivot screw (24), cylinder latch (23), and cylinder latch spring (22)



**6** Trigger spring (33) and plunger (32) are positioned in a hole in grip frame at rear of trigger guard bow. Innermost coil of trigger spring is enlarged to prevent loss during disassembly and reassembly. Care should be exercised in removing plunger and spring to prevent deformation of spring



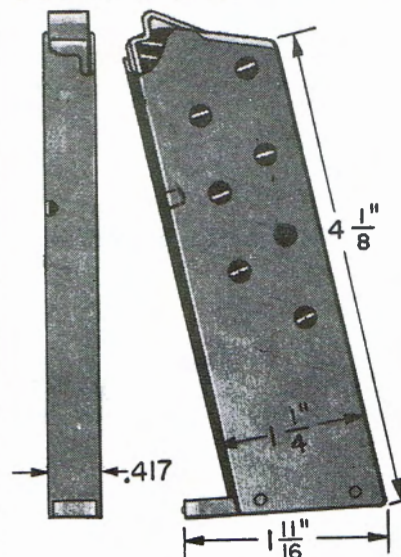
**7** Hammer plunger (17) is retained in hammer by a small pin (15) which may be removed by means of a small flat-nosed punch. Reassembly of arm is accomplished in reverse order



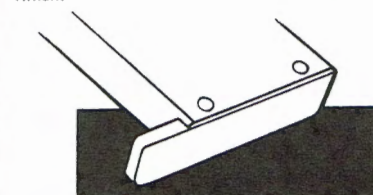
French 1935A MAS  
.32 Automatic

## PISTOL MAGAZINES

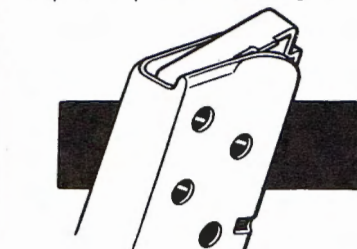
One of a series



Although the French 1935A MAS automatic pistol is not particularly well known or appreciated in this country, it is nevertheless an interesting weapon. This gun is a copy of a 9 mm. pistol designed by a Swiss engineer named Petter. It fires a rather odd cartridge that resembles a long .32 automatic pistol cartridge. Contrary to general practice the pistol is finished in a baked enamel. While this finish tends to cheapen the appearance of the MAS, it is practical for it is much more rust resistant than the standard blue finish.



Magazines for the 1935A MAS can usually be identified at a glance by their shape. They look long enough to handle a 9 mm. but are far too narrow to accept one. Another point of note is the way in which the magazine floorplate is pinned to the magazine sides.



Other points of identity are the double step in the follower, the rounded shape of the slide clearance notch in the back strap of the magazine, and the observation holes in both sides.—E. J. HOFFSCHMIDT



# Sauer & Sohn

## Model 38 Pistol,

### Cal. .32 ACP

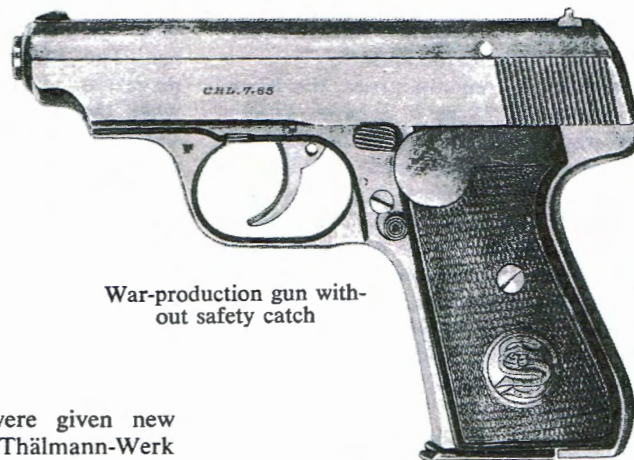
By E. J. Hoffschmidt

EXCEPT for short periods between wars, the German firm of J. P. Sauer & Sohn has been making fine guns continuously for more than 200 years. In 1751 they started with flint-lock fowling pieces and ended up in 1945 producing semi-automatic pistols and Mauser rifles.

When the Russians occupied the German gun center of Suhl, they turned arms manufacture over to the East Zone Communists. Production was resumed under a state cooperative called

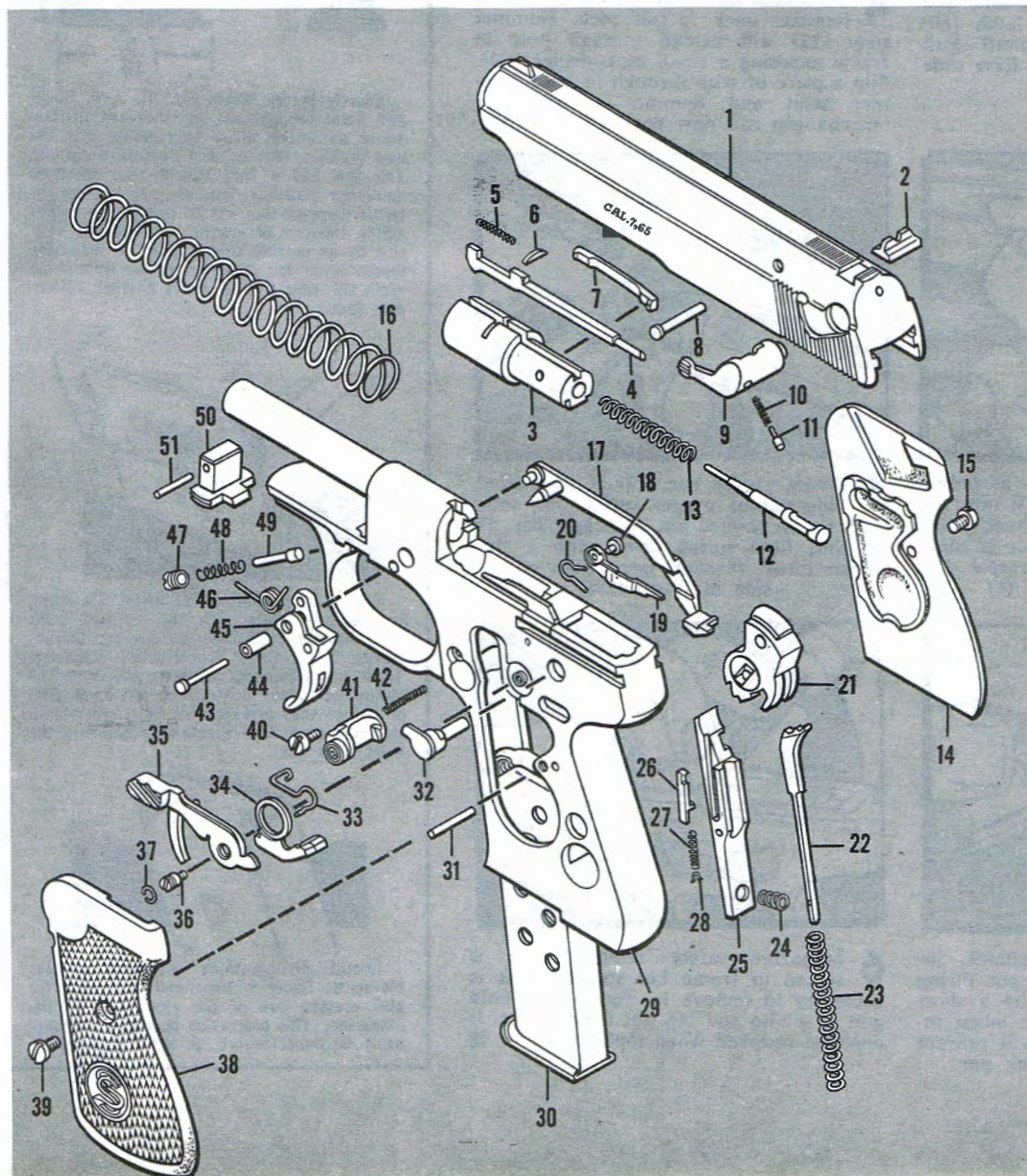
MEWA. The firms were given new names such as Ernst-Thälmann-Werk VEB (C. G. Haenel), Jagdgewehr-und Lehnrbau VEB (Greifelt and Co.), Fortuna-Werk VEB (J. P. Sauer & Sohn). The Sauer management finally left the East Zone, and in March 1951 set up shop in Düsseldorf and Eckernförde in West Germany. They are currently making business machines, shotguns, and 3-barrel guns.

During the early 1930's, the Walther firm startled the German gun trade with



War-production gun without safety catch

their double-action pistols. Not to be outdone, Sauer began work on the Model H. While retaining some of the lines of the old Sauer Behördenmodell, the new gun was designed for mass production. Many of the operating parts were stampings or die castings. Machining of the slide was simplified



#### Parts Legend

1. Slide
2. Rear sight
3. Breechblock
4. Cartridge indicator
5. Indicator spring
6. Spring retainer
7. Extractor
8. Block retainer pin
9. Safety catch
10. Safety detent spring
11. Safety detent
12. Firing pin
13. Firing pin spring
14. Right grip
15. Grip screw
16. Recoil spring
17. Trigger bar
18. Magazine safety retainer
19. Magazine safety bar
20. Safety spring
21. Hammer
22. Hammer strut
23. Hammer spring
24. Sear spring
25. Sear
26. Sear disconnect
27. Disconnect spring
28. Spring retainer
29. Frame
30. Magazine
31. Sear hinge pin
32. Hammer extension
33. Cocking lever spring
34. Hammer lever
35. Cocking lever
36. Lever hinge screw
37. Retainer ring
38. Left grip
39. Grip screw
40. Magazine catch screw
41. Magazine catch
42. Magazine catch spring
43. Trigger pin
44. Trigger bushing
45. Trigger
46. Trigger spring
47. Spring retainer
48. Detent spring
49. Takedown detent
50. Takedown latch
51. Latch crosspin

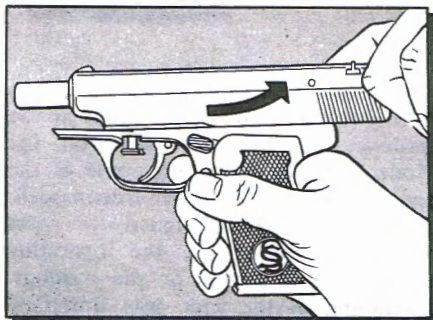


by making the breech a separate piece and pinning it to the slide.

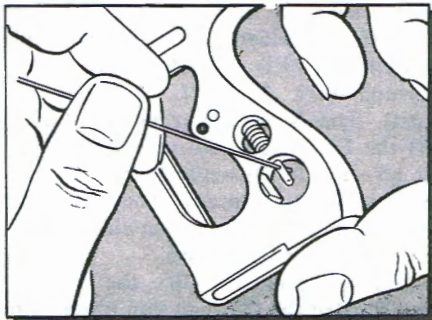
Unlike its contemporaries, the Model H, or Model 38 as it is better known, features an enclosed hammer. With the aid of an ingenious lever, the internal hammer can be cocked for single-action fire. This lever also allows the hammer to be eased down from full cock. If the lever is pushed down when the hammer is cocked, it releases the hammer, allowing it to be lowered as in a pistol with an outside hammer. Another interesting feature is the indicator pin, which protrudes from the end of the

slide when a cartridge is in the chamber. The Model 38 has 2 safeties: a magazine safety that prevents firing when the magazine is removed, and a slide safety. The slide safety is handy and simple. It blocks the hammer and locks the trigger mechanism.

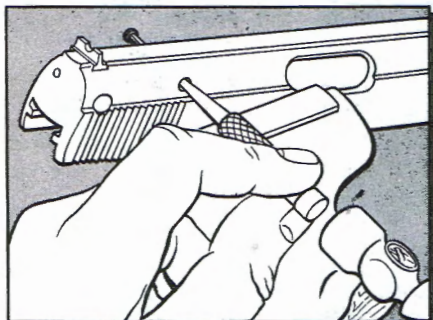
Like most other late German pocket pistols, the Sauer Model 38 is found in 2 types—the pre-war gun with fine finish and excellent workmanship, and the crude but serviceable wartime product. The bulk of the Sauers in the U. S. seem to be of the later wartime production, usually without the slide safety.



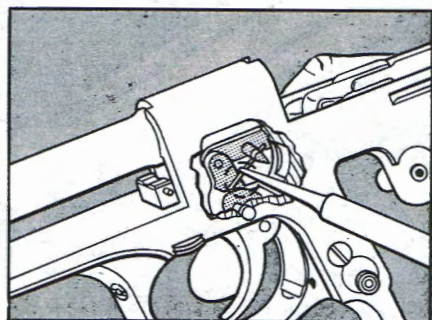
**1** To disassemble, remove magazine and clear chamber. Pull down latch (50) in upper portion of trigger guard. Pull slide (1) to rear and lift it up. Ease slide forward off barrel



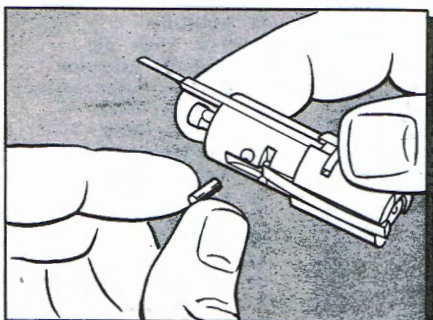
**4** To disassemble sear mechanism, bring hammer back to full cock. Hammer strut (22) will extend through hole in frame exposing a small cross-drilled hole. Slip a piece of wire through to hold hammer strut and hammer spring. Sear mechanism can now be easily removed



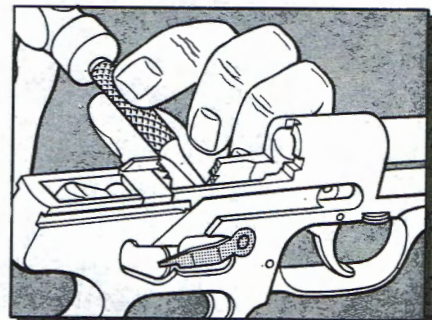
**2** To remove breechblock assembly, drive out retainer pin (8). It must be driven from right to left. Breechblock can now be driven forward out of slide exposing firing pin (12), extractor (7), and cartridge indicator (4)



**5** When trigger bar (17) is reinstalled, long tail of trigger spring (46) must push up on pointed pin on trigger bar. To do this, hold spring down with a thin punch thrust through large hole on left side of frame (29)



**3** When reassembling breechblock, install extractor and indicator pin. Firing pin should be held in place by a short slave pin which is pushed out when retainer pin is driven in. This will prevent damage to spring and firing pin



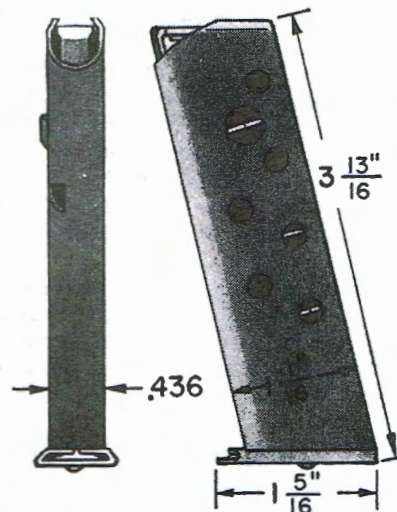
**6** Magazine safety retainer (18) is staked to frame but sometimes it is necessary to remove it. To do this, hold gun in a vise and tap out from inside. It must be restaked when replaced



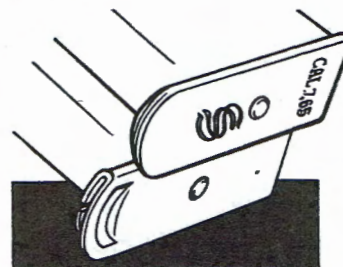
**Sauer Double-Action  
.32 Automatic**

## PISTOL MAGAZINES

One of a series



Shortly before World War II, J. P. Sauer and Sohn brought out an advanced double-action automatic pistol to compete with the new Walther, Mauser, and Bergmann designs. The gun has a fine balance and contains numerous excellent features. It has an internal hammer that can be cocked for single-action shooting or lowered to uncocked position by an outside thumb lever. A magazine disconnect that prevents the gun from firing when the magazine is out is another noticeable feature.



The unusual folded sheet metal floorplate, or the solid plate with the serrated front edge and the take-down buttons are characteristic of the Sauer double-action magazine. These magazines are seamless and have the observation holes only in the left-hand side, and since they are retained by a cross latch the magazines have a retaining notch in the right front side.



Another distinguishing feature of the double-action Sauer is the small protrusion (or pin) pressed out of the right side of the magazine. This protrusion operates the magazine disconnect.—E. J. HOFFSCHMIDT



# SAUER MODEL 1930 PISTOL

By E. J. HOFFSCHMIDT



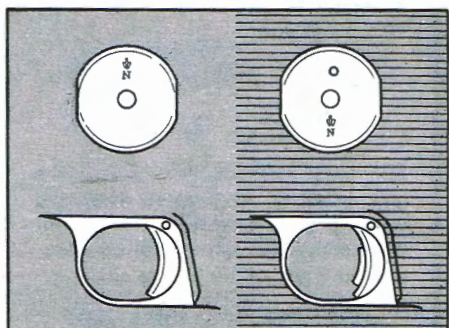
**M**ANUFACTURED by the German arms firm of J. P. Sauer & Sohn, the Sauer Model 1930 cal. .32 ACP pistol was first offered in 1930. Of simple blowback-operated, striker-fired design, the Model 1930 pistol is a development of an earlier Sauer pistol introduced in 1913. Detachable magazine of the Model 1930 pistol holds 7 cartridges.

There is a close resemblance between the earlier version and the Model 1930 pistol, but they can be readily distinguished by differences in frame design. Front grip strap of the earlier pistol is

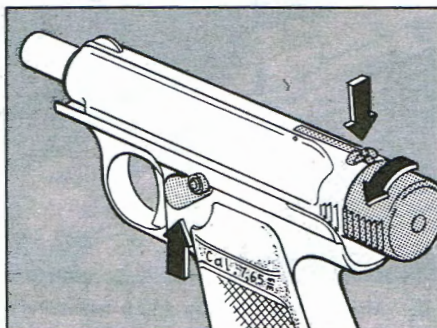
straight, whereas that of the Model 1930 curves forward at the base to provide a support for the little finger. Frame of the Model 1930 pistol extends beyond the rear face of the slide cap, whereas the slide cap of the earlier model overhangs the frame slightly.

As a further refinement of the Model 1930 pistol, the Sauer firm introduced their Behorden Model (Authority Model), also chambered for the .32 ACP cartridge. Apparently aimed at possible municipal government markets, the Behorden Model features a trigger

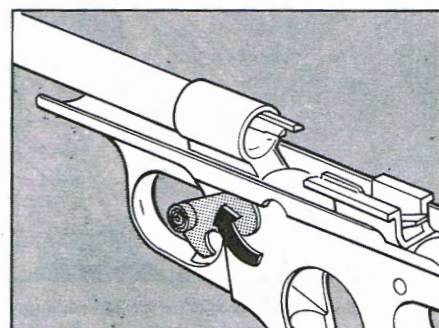
safety, magazine safety, manual safety, and optional cartridge signal pin device in the slide cap. With the exception of the manual safety, none of these auxiliary safety devices are present in the Model 1930 pistol. Model 1930 and Behorden Model pistols were optionally available with steel or aluminum frames and slides. Minor changes were made in their internal mechanisms during course of manufacture. Sauer Model 1930 and Behorden Model pistols were superseded by the Sauer Model 38 double-action pistol.



**1** Slide cap and trigger details of Model 1930 (l.) and Behorden Model pistols. Trigger safety of Behorden Model pistol extends from face of trigger. Cartridge signal pin protrudes from upper hole in slide cap of Behorden Model pistol when cartridge is in chamber.

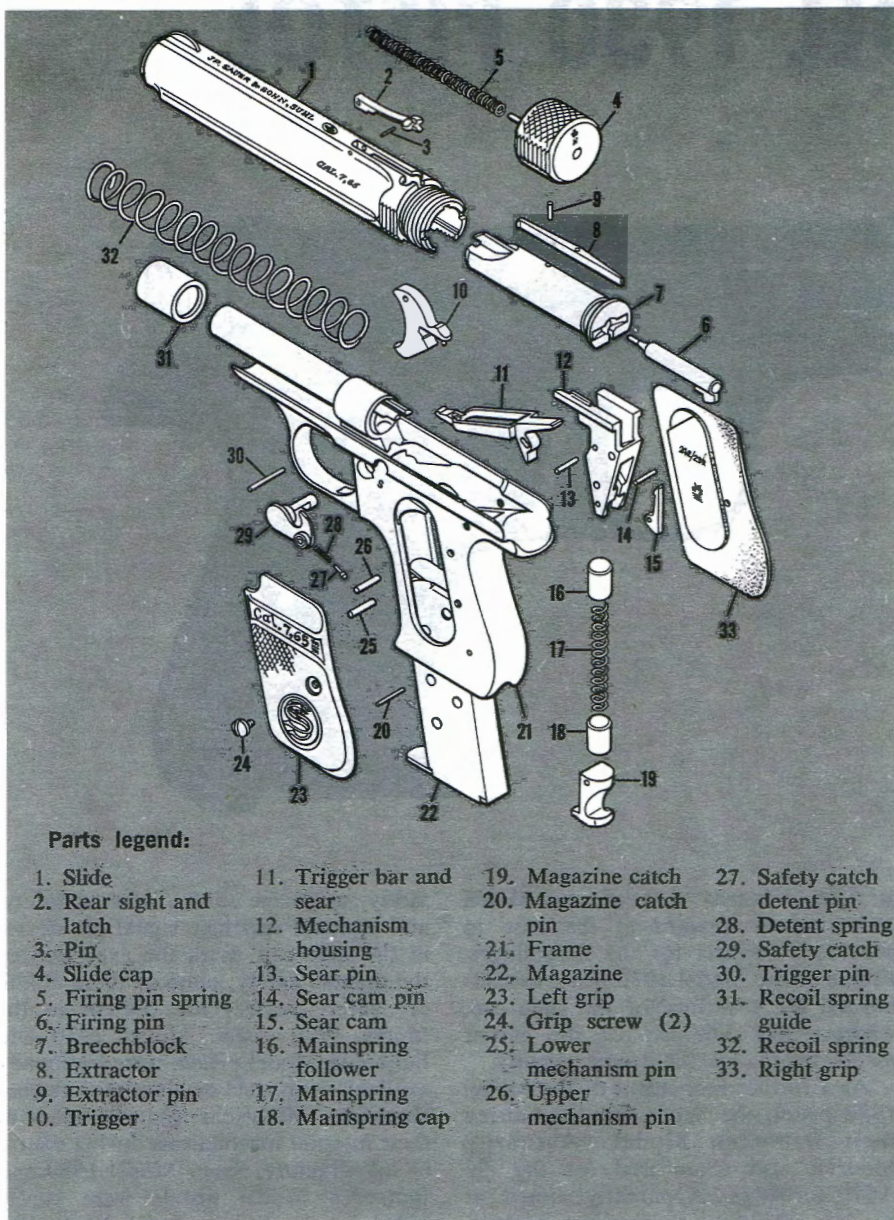


**2** To disassemble Model 1930 pistol, first remove magazine and be certain chamber is unloaded. Pull back slide (1) about an inch until safety catch (29) engages slide. Depress rear sight and unscrew slide cap (4) from slide. Remove breech-block assembly (7). Then release safety and ease slide off front of frame.



**3** Safety catch should be removed before disassembling gun internally. First remove grips, then rotate safety catch 180° until hinge pin portion is clear of undercut in frame. Do not let safety catch detent pin (27) and detent spring (28) fly out when safety catch is withdrawn. To replace, depress the safety catch detent pin with thin piece of brass and push into frame.



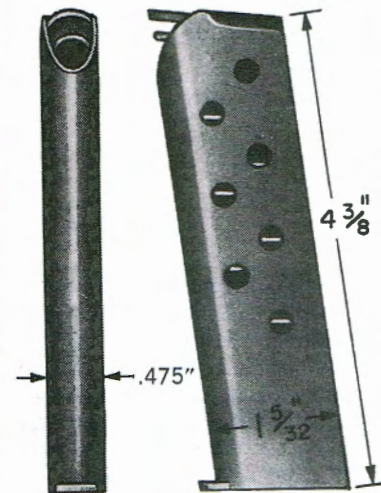


## PISTOL MAGAZINES



**Webley & Scott  
9 mm. Pistol**

The Webley & Scott 9 mm. Browning automatic pistol was used by a number of police organizations throughout the British Commonwealth. This is a straight blowback-operated pistol without delay device in the mechanism. The powerful cartridge requires a heavy slide and strong recoil spring to prevent premature opening of the slide.



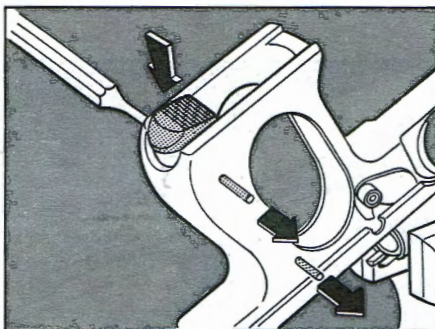
While finish and workmanship of the pistol is first class, the design leaves something to be desired. The outside hammer is difficult to thumb back for a rapid first shot and the grip angle makes shooting awkward. The magazine is well made, but has little to distinguish it from other common types.



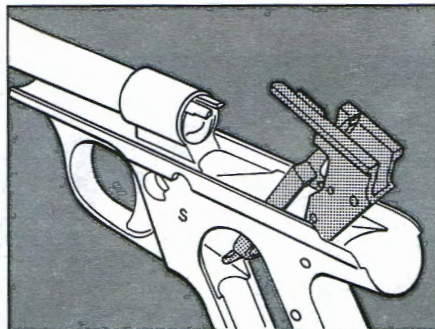
The magazine follower is simply a bent piece of sheet metal. Magazine lips are slightly rounded to conform with contour of the cartridges.



An obvious point of recognition is the magazine catch hole in lower end of backstrap.—E. J. HOFFSCHMIDT



**4** The pins in the Model 1930 Sauer pistol are tapered and should be removed from right to left. In reassembly, install mainspring (17), mainspring follower (16) and mainspring cap (18) last. Hold pistol in padded vise jaws and push in magazine catch. Use a thin punch to hold and align magazine catch (19) in frame while inserting magazine catch pin (20).



**5** Mechanism housing (12) has several functions: ejector, cartridge guide, slide guide, and it also contains the sear mechanism. To remove unit, drive out lower and upper mechanism pins (25, 26) and lift free of trigger. Take care to prevent mainspring assembly (16, 17, 18) from flying out. To replace, be sure trigger bar and sear (11) are pointing down. ■



# SAVAGE

## Model 1910

### Pocket Pistol



By E. J. Hoffschmidt

THE early 1900's was the golden age of automatic pistol development, with all leading American and European companies experimenting with both military and pocket types. The Savage Arms Co. was no exception, their first effort being a cal. .45 ACP pistol for the U. S. Army trials of 1907. At the same time they adapted E. H. Searle's locking system to a pocket pistol. The system enabled Savage to build a light compact gun that lies low in the hand and points naturally. With the Searle system, the barrel has to turn as the breechblock moves to the rear. But while the bullet is going through the barrel, the work of spinning the bullet resists this rotation of the barrel, which helps to hold the breech closed until the bullet has left the barrel. In the cal. .32 and .38 models there is no true mechanical lock.

The Savage has the largest magazine capacity of any popular pocket pistol. The cal. .32 model has a 10-round magazine capacity while the cal. .380 has a 9-round capacity. The magazines hold the cartridges in a staggered double row, and are very strongly made.

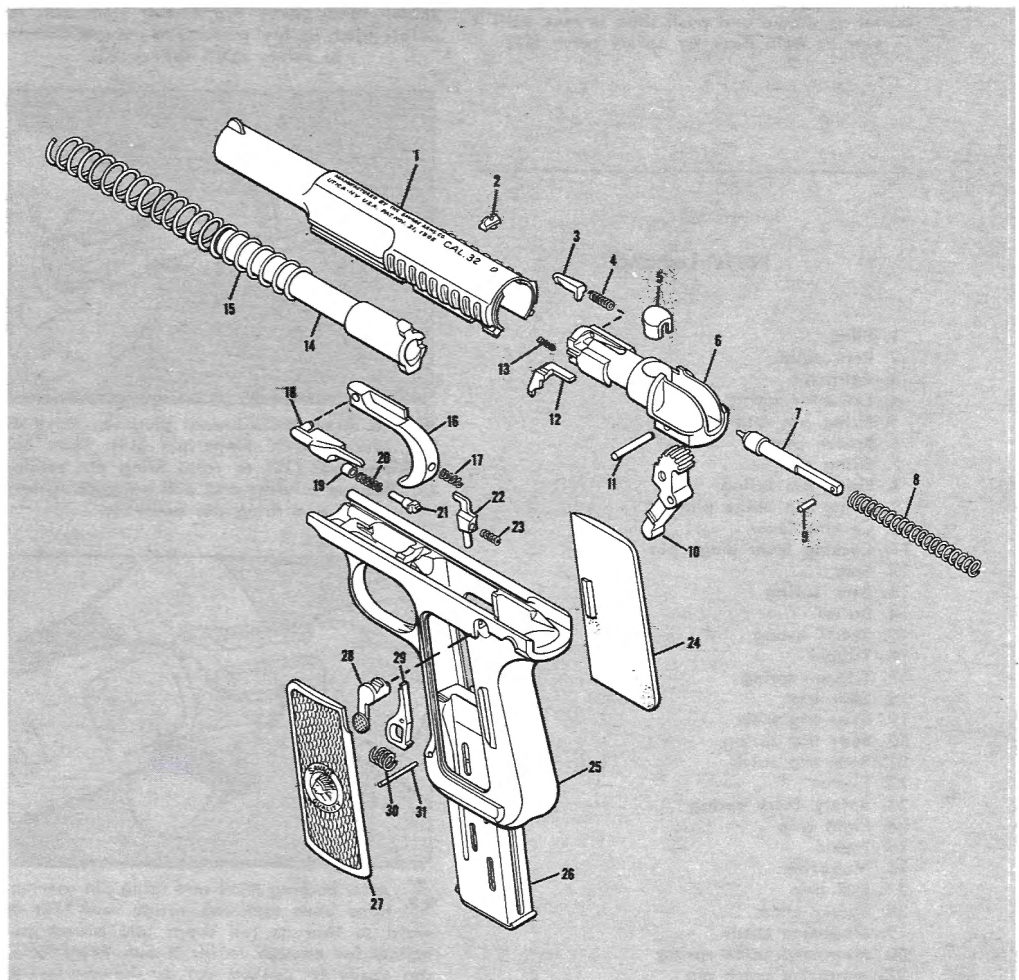
An interesting feature is the method used to retain the grips, as no screws are necessary. The hard rubber grips are slid into corresponding dovetail slots in the frame, with projections on the inside of the grips snapping into grooves in the frame to utilize the natural resilience of the hard rubber.

In spite of its features and excellent workmanship, the Savage has its drawbacks. The position of the cocking lever and strength of the firing pin spring make it almost impossible for the average shooter to cock the gun with the shooting hand only. Another feature subject to criticism is the unusual sear mechanism built into the breech plug, which does not have a half-cock position. Thus, the firing pin is either all the way forward or at full cock. This

makes it, for practical considerations, impossible to carry the gun with a cartridge in the chamber and hammer down as the hammer is directly connected to the firing pin and the firing pin contacts the cartridge primer when the hammer is down. If there is a round in the chamber, the only safe way to carry the gun is at full cock with safety catch on. Even though the trigger mechanism has a disconnecter, the guns are more prone to going automatic than any other pocket pistol. If the trigger pull is lightened too much, or dirt and

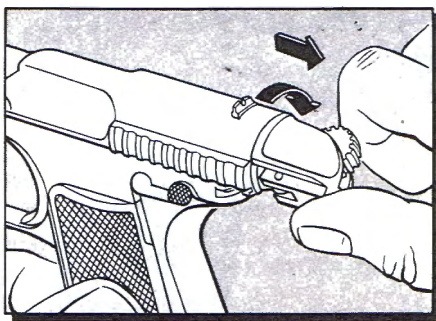
fouling build up between the sear and the breechblock, these pistols have been known to fire as the slide slams forward.

The gun illustrated is the 1908 type, more popularly called the Model 1910. It was made in cal. .32 ACP and .380 ACP, in a number of variations. There were hammerless models, models with grip safeties, and some with hold-open devices. In 1917 the gun was revised and the grip and hammer reshaped. These Savage pistols are notable for their design and unsurpassed workmanship.

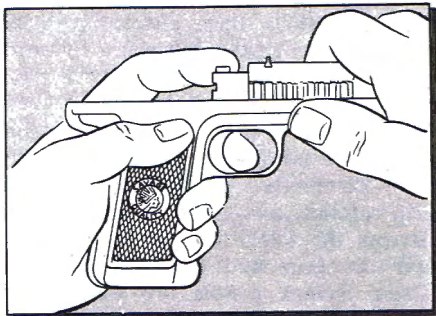


E. J. HOFFSCHMIDT is an artist-illustrator with years of experience with firearms.

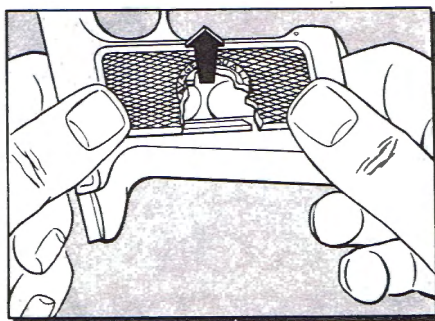




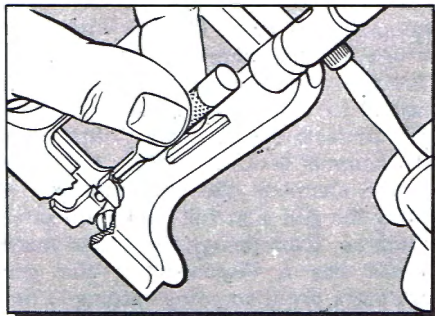
**1** To take down the Savage, first remove magazine and clear chamber. Pull back slide and put safety catch (28) on. Grasp cocking lever and breech plug as shown, squeeze, and rotate plug  $\frac{1}{4}$  turn. Plug assembly can now be pulled free of slide



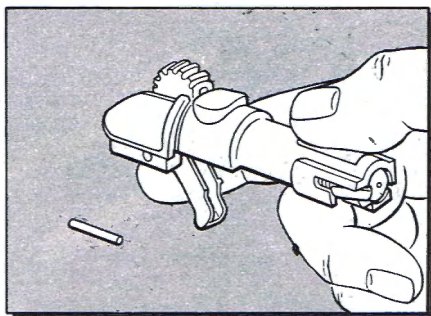
**2** After removing breech plug (6), hold back trigger and release safety. Ease slide off front of frame (25); when reassembling, hold barrel as shown and push slide to rear until it can be held back by safety catch (28)



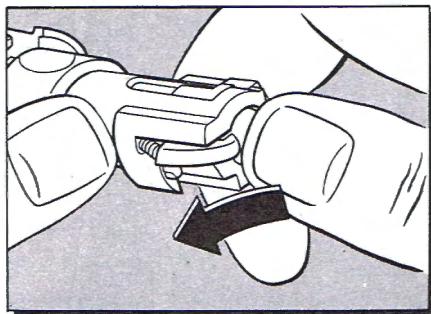
**3** Grips are retained by dovetail slots in top and bottom of frame. To remove them, insert first finger of each hand into magazine well as shown and push at center of grip. Resiliency of the hard rubber grip will allow it to snap out without breaking



**4** To remove safety catch (28), it is necessary to first drive out ejector (22). After grips are removed, insert a thin punch or nail set as shown, and gently tap ejector stem out. Put safety catch in 'fire' position to prevent damage to safety catch spring (23)

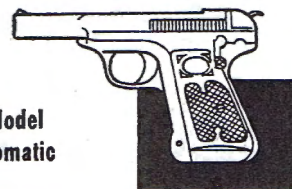


**5** To disassemble breech plug (6), drive out cocking lever hinge pin (11). Then cock cocking lever (10) to raise firing pin retainer (5). Remove retainer and pull out cocking lever and firing pin assembly



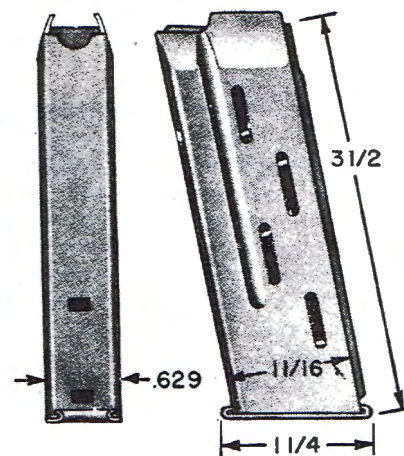
**6** After cocking lever and firing pin assembly have been removed, rotate sear (12) upward so that its tail drops into breech plug hollow far enough to lift it out. Extractor (3) can easily be pushed out as shown

## Savage Model 1917 Automatic

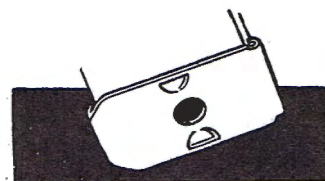


## PISTOL MAGAZINES

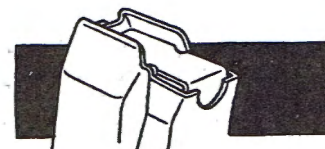
One of a series



When the Savage Arms Co. stepped out of the pistol business in 1928, the gun world lost a source of interesting weapons. Their pocket pistols worked on the so-called hesitation blowback system as differed from the usual straight blowback system found on most pocket pistols. Savage pocket pistols were produced in several models and in either .32 or .380 cal. Shown here is the magazine for the Model 1917. The gun can be identified by its spur hammer and unusually wide grip. Well made and with large magazine capacity, Savage pistols were among the best pocket pistols of their day.



Savage magazines are almost twice as thick as the usual .32 automatic since they carry a staggered double row of cartridges. They are rarely marked but some will be found with a serial number. The illustration shows the unusual method of retaining the magazine floorplate.



These magazines are well made and resemble a small-scale version of the Browning Hi Power. The feed lip is very stiff and strong with a long tapering slope on either side to prevent the staggered row of cartridges from jamming.—E. J. HOFFSCHMIDT.

### Parts Legend

1. Slide
2. Rear sight
3. Extractor
4. Extractor spring
5. Firing pin retainer
6. Breech plug
7. Firing pin
8. Firing pin spring
9. Firing pin hinge pin
10. Cocking lever
11. Cocking lever hinge pin
12. Sear
13. Sear spring
14. Barrel
15. Recoil spring
16. Trigger
17. Trigger spring
18. Sear trip
19. Sear trip lifter
20. Sear trip spring
21. Sear trip catch
22. Ejector
23. Safety catch spring
24. Right grip
25. Frame
26. Magazine
27. Left grip
28. Safety catch
29. Magazine catch
30. Magazine catch spring
31. Magazine catch pin





# SAVAGE MODEL 101 PISTOL

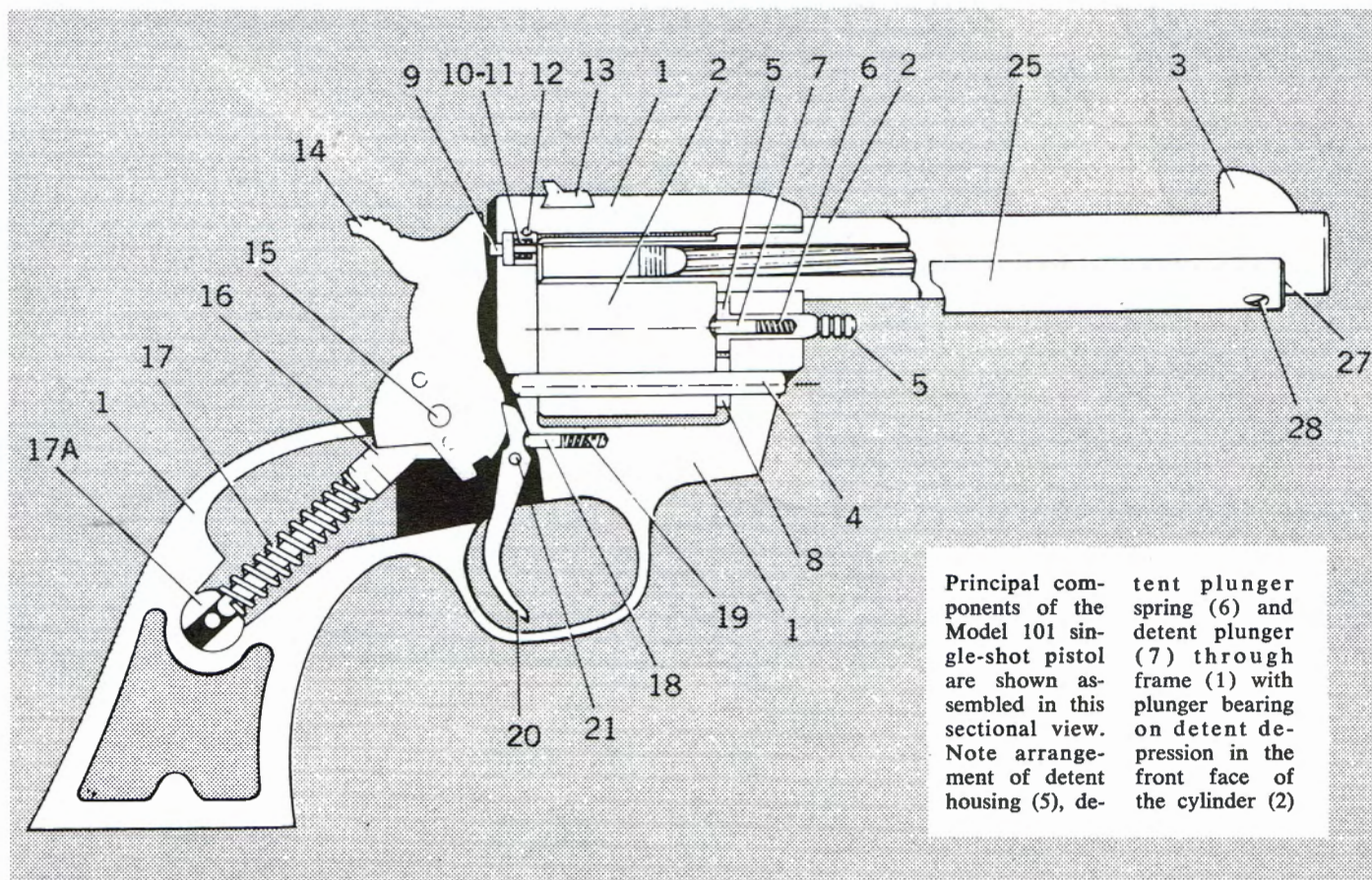
By JAMES M. TRIGGS

## Parts Legend

- |                               |                                |  |
|-------------------------------|--------------------------------|--|
| 1. Frame                      | 12. Recoil plate retaining pin | 22. Ejector assembly                         |
| 2. Barrel & cylinder assembly | 13. Rear sight                 | 23. Ejector spring                           |
| 3. Front sight                | 14. Hammer                     | 24. Ejector rod assembly                     |
| 4. Cylinder pivot pin         | 15. Hammer pin                 | 25. Ejector tube                             |
| 5. Detent housing             | 16. Mainspring plunger         | 26. Ejector tube guide                       |
| 6. Detent plunger spring      | 17. Mainspring                 | 27. Ejector tube plug                        |
| 7. Detent plunger             | 17A. Mainspring trunnion       | 28. Ejector tube screw                       |
| 8. Cylinder pivot pin bushing | 18. Trigger spring plunger     | 29. Grip, right (left grip not shown)        |
| 9. Firing pin                 | 19. Trigger spring             | 30. Grip screws (2) (right screw only shown) |
| 10. Firing pin spring         | 20. Trigger                    |  |
| 11. Recoil plate              | 21. Trigger pin                |  |

THE Savage Model 101 single-shot pistol was introduced in 1960. In appearance it generally resembles the traditional frontier-type single-action revolver, but the cylinder is actually a dummy and merely shrouds the rear end of the barrel. The barrel and dummy cylinder swing to the right to expose the breech for loading or ejection. The rod ejector is actuated by a thumb button under the left side of the barrel near the muzzle. The hammer is of rebounding type. The independent spring-loaded firing pin is pinned in rear of the frame. The mainspring is of coil type.

Frame and dummy cylinder of the Model 101 are of die-cast alloy. The barrel and other parts are of steel. Grips are of laminated walnut-colored wood impregnated with plastic.



Principal components of the Model 101 single-shot pistol are shown assembled in this sectional view. Note arrangement of detent housing (5), detent plunger spring (6) and detent plunger (7) through frame (1) with plunger bearing on detent depression in the front face of the cylinder (2)



## Disassembly Procedure

Check action to be sure pistol is unloaded. Remove grip screws (30) and grips (29) from frame (1). Drift out hammer pin (15) from left to right and drive mainspring trunnion (17A) out of frame from left to right. Remove mainspring (17), pull back on trigger (20), and lift hammer (14) out top of frame with mainspring plunger (16). Drift out trigger pin (21) from left to right, taking care not to allow escape of compressed trigger spring (19) and trigger spring plunger (18). Trigger (20) may now be removed from frame.

With barrel and cylinder assembly (2) in firing position, drift out cylinder pivot

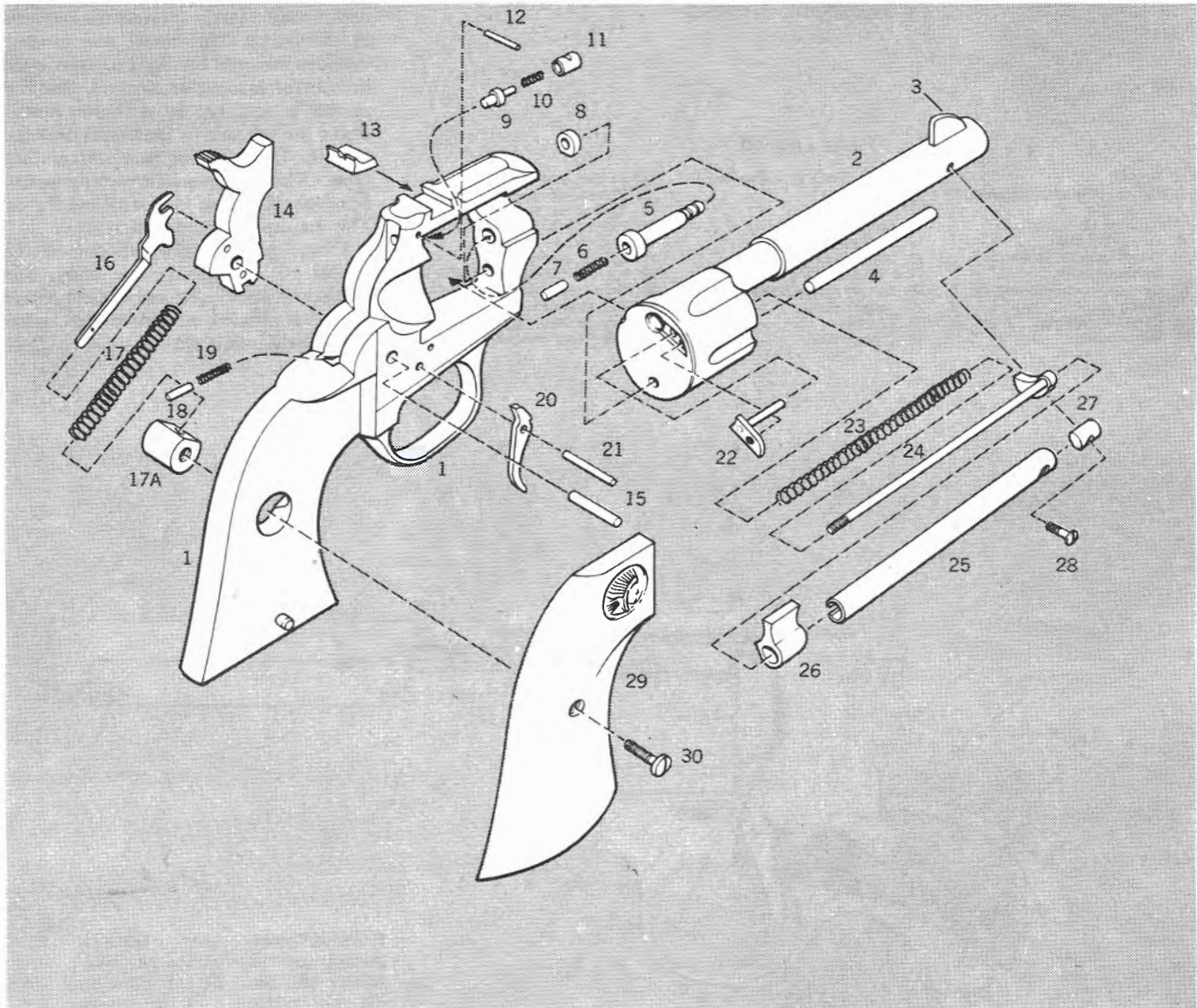
pin (4) toward muzzle by inserting punch through hammer slot in rear of frame. Remove cylinder pivot pin bushing (8).

To remove barrel and cylinder assembly from frame, follow procedure carefully. *Do not rotate cylinder in frame after removing cylinder pivot pin. Take care to guide cylinder to allow detent plunger (7) to pass between dummy chamber holes in front face of cylinder.* With detent plunger clear of cylinder, remove entire assembly from frame. Follow same procedure in reassembly of barrel and frame.

**Note:** If detent plunger (7) is allowed to enter any of the dummy chamber holes in front face of cylinder, it will be impossible either to complete disassembly or to re-

assemble barrel and cylinder assembly to frame without cutting or drilling out detent housing (5) in order to remove detent plunger (7) from front of cylinder.

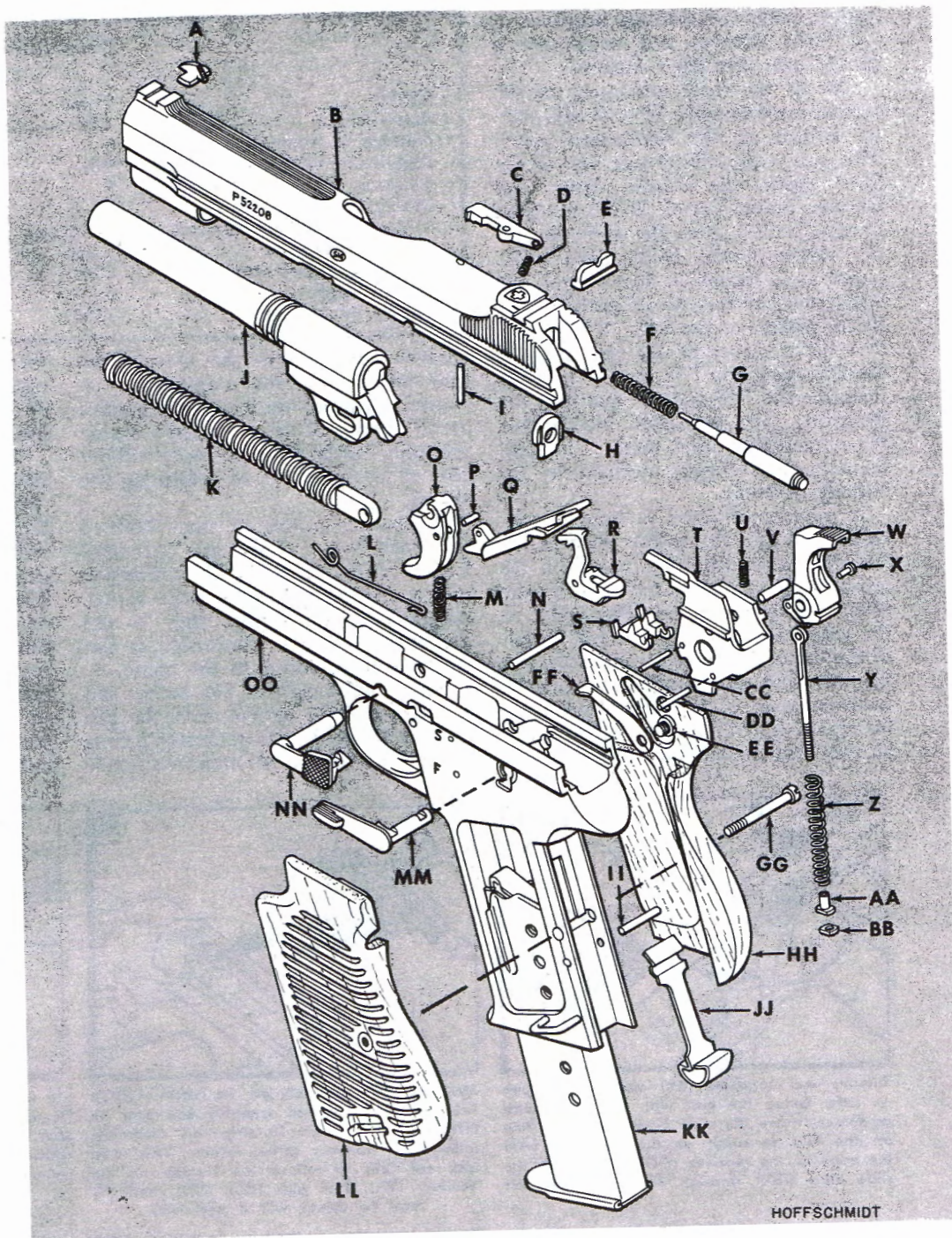
After removing barrel and cylinder assembly from frame, withdraw detent plunger (7), detent plunger spring (6), and detent housing (5) to rear. Removal of firing pin assembly is accomplished by drifting out recoil plate retaining pin (12) and removing firing pin (9), firing pin spring (10), and recoil plate (11) to front. Ejector assembly is removed by unscrewing ejector tube screw (28) and separating ejector components after unscrewing ejector assembly (22) from ejector rod assembly (24). Reassemble pistol in reverse. ■





# Legend

- A—Front sight
- B—Slide
- C—Extractor
- D—Extractor spring
- E—Rear sight
- F—Firing pin spring
- G—Firing pin
- H—Firing pin retainer plate
- I—Extractor hinge pin
- J—Barrel
- K—Recoil spring assembly
- L—Slide stop operating spring
- M—Trigger spring
- N—Trigger hinge pin
- O—Trigger
- P—Trigger bar pin
- Q—Trigger bar
- R—Sear
- S—Sear pressure plate
- T—Sear and hammer housing
- U—Sear spring
- V—Hammer hinge pin
- W—Hammer
- X—Hammer strut pin
- Y—Hammer strut
- Z—Hammer spring
- AA—Spring retainer nut
- BB—Spring retainer lock nut
- CC—Sear hinge pin
- DD—Pressure plate stop pin
- EE—Magazine disconnector screw
- FF—Magazine disconnector
- GG—Grip screw
- HH—Right-hand grip
- II—Magazine catch pin
- JJ—Magazine catch
- KK—Magazine
- LL—Left-hand grip
- MM—Safety catch
- NN—Slide stop
- OO—Receiver



HOFFSCHMIDT



## SIG-Neuhausen Pistol

By E. J. Hoffschmidt



THE same workmanship displayed in Swiss watches and machinery is carried over into their firearms.

One of the most interesting of the current imports is the SP47/8 SIG, better known as the Neuhausen pistol. This gun is the official side arm of the Swiss Army, the Danish Army, and German Border Patrol. It was designed to replace the Lugers, the revolvers, and the earlier model Neuhausens. The oldest arms factory in Switzerland, the Schweizerische Industrie-Gesellschaft, is the originator of the SP47/8 SIG.

A quick glance at the gun suggests the Browning and P38 lines. The grips resemble the P38 and the gun uses the Browning type of locked breech, but the resemblance stops there. The sear, hammer, and trigger mechanisms are entirely different.

A number of novel features are incorporated into this pistol. First of all, the slide is guided back and forth far more rigidly and accurately than on any other current automatic. This is due to the long tracks that run the full length of the top of the receiver. Secondly, the hammer and sear mechanism can be removed as an assembly for checking or for repair. The design also incorporates an excellent double-stage trigger and a

# TECHNICAL DATA

		Parabellum	Long Rifle
Caliber	9 mm.	7.65 mm.	.22
Barrel length	4-3/4"	4-3/4"	4-3/4"
Number of grooves	6	4	6
Right-hand twist, one turn in	9-7/8"	9-7/8"	17-3/4"
Magazine capacity: Cartridges	8	8	8
Weights:			
Weapon without magazine	31-3/4 ozs.	32 ozs.	29-3/4 ozs.
Empty magazine	3 ozs.	3 ozs.	3-1/3 ozs.
Length of line of sight	6-1/2"	6-1/2"	6-1/2"
Overall length	8-1/2"	8-1/2"	8-1/2"
Muzzle velocity f.p.s.	1150	1200	670

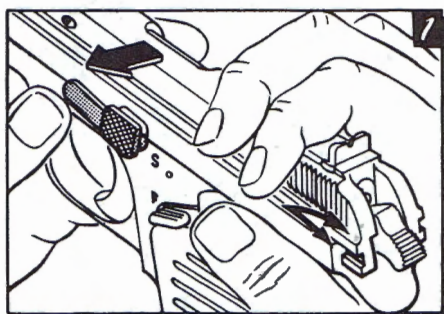
magazine disconnecter that prevents the gun firing when the magazine is removed. Last but not least is the captive recoil spring. This pre-stressed spring assembly can be removed easily without fear of losing an eye or deforming the spring.

Neuhausen pistols are manufactured in either 9 mm. Luger or 7.65 mm. Luger caliber. A .22 caliber conversion unit consisting of a barrel, recoil spring, magazine, and a lighter slide is also available. A 4 mm. conversion is also available for shooting in the house.

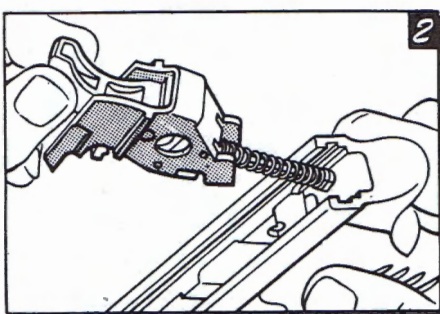
An overall length of 8 1/2 inches and a weight of 34 3/4 ounces make the gun feel and shoot like a target pistol. Strong enough to handle ammunition made

for any of the World War II and current machine pistol arms, it fires clips of American, Swiss, German, and English mixed cartridges without trouble.

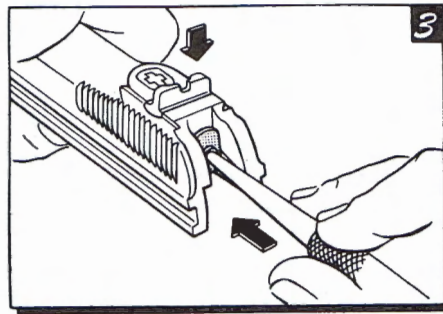
While the take-down procedure is simpler, in some respects, than the Colt .45 automatic, it could be improved if a hold-open latch of some sort were installed to position the slide exactly where the slide stop can be pushed out. The grip removal is tricky, too. After removing the grip screw, insert a long thin knife blade in the seam between the grips and spread them. The grips must be spread in this manner because an undercut projecting into the frame prevents the grips lifting off in the usual manner. ♦ ♦ ♦



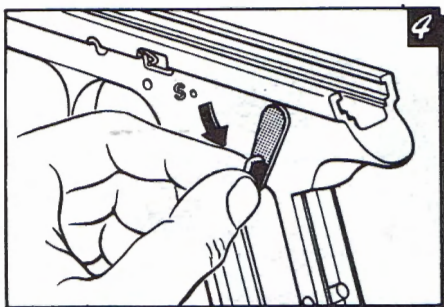
Remove the magazine (KK) and put the gun on safe. Grasp the gun with the right hand as shown, move the slide back enough to line up the first serration on the slide (B) with the edge of the receiver (OO). Now push the slide stop (NN) through from right to left



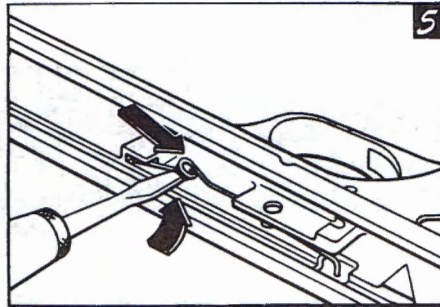
Strip the slide assembly off the receiver (OO). The sear and hammer assembly can now be lifted out as a unit. To strip this assembly, remove the hammer spring retainer (AA) and lock nut (BB) to relieve the tension on the hammer (W). Now pins (CC), (DD), and (V) may be driven out if necessary



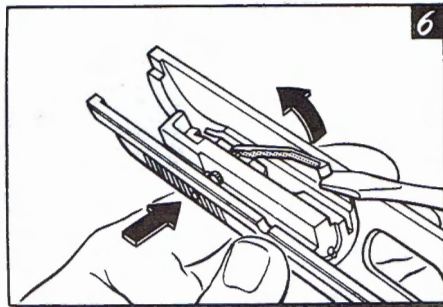
To remove the firing pin (G) and spring (F), it is necessary to depress the end of the firing pin below the surface of the firing pin retainer plate (H). Use the slide stop or a small diameter punch to depress the firing pin, then push the retainer plate down as shown



After removing the grips, (LL) and (HH), the safety (MM) can be rotated below the "F" engraved in the receiver until it springs free. It may be necessary to lift the safety out of the detent hole alongside the "F", before attempting to rotate it downward



The slide stop spring (L) is the only part that is difficult to remove. It is necessary to pry it up and over the pin in the receiver as shown. Then push it toward the hammer until the end of the spring is out of its notch in the receiver

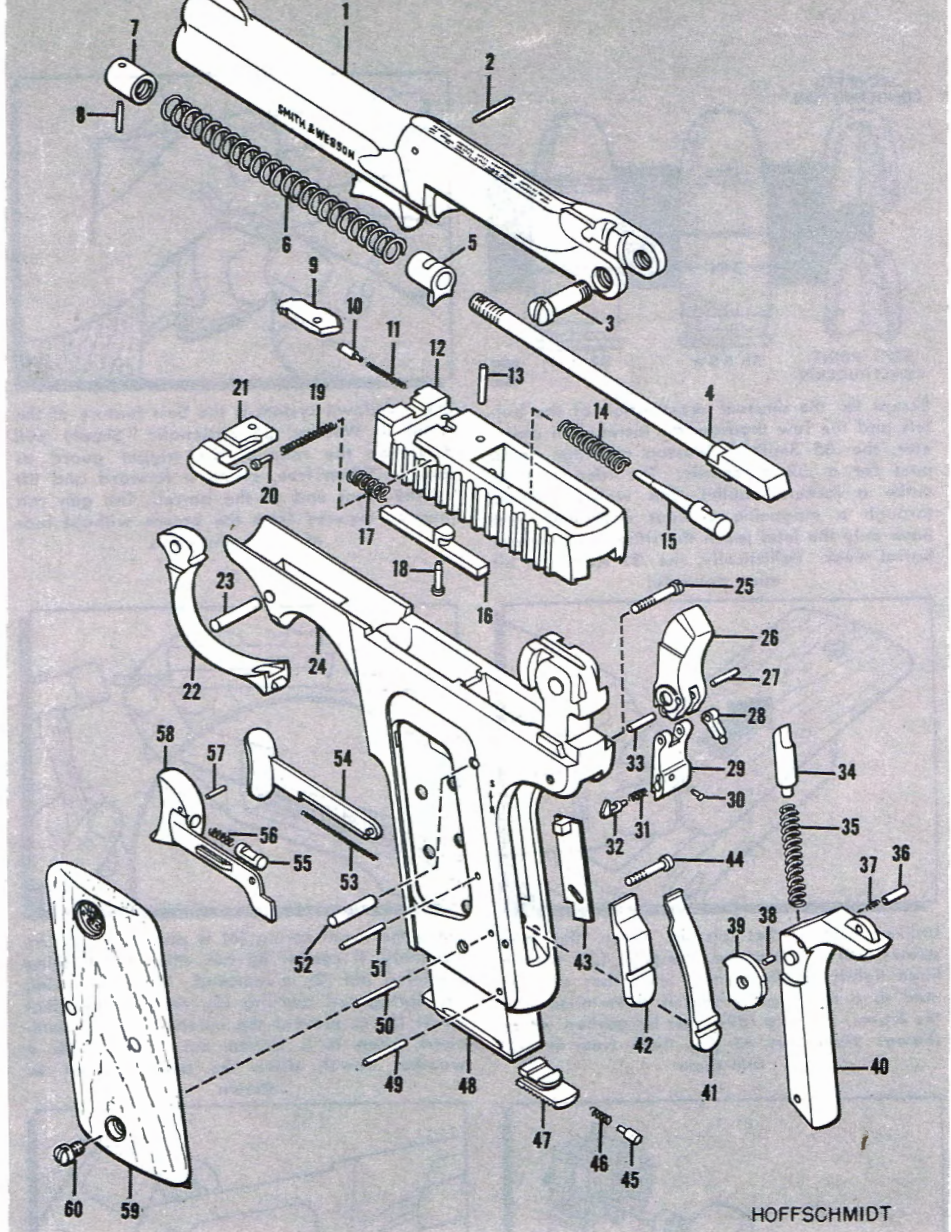


The extractor in the 9 mm. or 7.65 mm. can be removed by driving out pin (I). To remove the .22 conversion unit extractor, it is necessary to pry it up to a vertical position, as shown, to free it. Now, with the aid of a thin punch, push the loose pin across the slide into the hole left by the extractor and the firing pin can be removed



## LEGEND

- |                                      |                           |
|--------------------------------------|---------------------------|
| 1 Barrel                             | 33 Sear hinge pin         |
| 2 Bushing retaining pin              | 34 Mainspring plunger     |
| 3 Pivot screw                        | 35 Mainspring             |
| 4 Recoil spring rod                  | 36 Plunger retaining pin  |
| 5 Spring rod bushing                 | 37 Safety catch spring    |
| 6 Recoil spring                      | 38 Safety catch plunger   |
| 7 Recoil spring cap                  | 39 Safety catch           |
| 8 Cap retaining pin                  | 40 Backstrap              |
| 9 Extractor                          | 41 Sear spring            |
| 10 Extractor plunger                 | 42 Notch plate            |
| 11 Extractor spring                  | 43 Safety slide           |
| 12 Bolt (slide)                      | 44 Lower backstrap screw  |
| 13 Firing pin retaining pin          | 45 Magazine catch plunger |
| 14 Firing pin spring                 | 46 Magazine catch spring  |
| 15 Firing pin                        | 47 Magazine catch         |
| 16 Ejector                           | 48 Magazine               |
| 17 Ejector spring                    | 49 Magazine catch pin     |
| 18 Extractor pin                     | 50 Sear spring pin        |
| 19 Bolt release catch spring         | 51 Notch plate pin        |
| 20 Bolt release catch spring plunger | 52 Hammer pin             |
| 21 Bolt release catch                | 53 Grip safety spring     |
| 22 Trigger guard                     | 54 Grip safety screw      |
| 23 Trigger guard pivot               | 55 Trigger plunger        |
| 24 Frame                             | 56 Trigger plunger spring |
| 25 Upper backstrap screw             | 57 Trigger plunger pin    |
| 26 Hammer                            | 58 Trigger                |
| 27 Hammer strut pin                  | 59 Left-hand grip         |
| 28 Hammer strut                      | 60 Grip screw             |
| 29 Sear                              |                           |
| 30 Sear plunger pin                  |                           |
| 31 Sear plunger spring               |                           |
| 32 Sear plunger                      |                           |



# Smith & Wesson .35 Cal. Auto Pistol

By E. J. Hoffschmidt

To some readers, the title of this article may look like a misprint, but the .35 caliber automatic was an unfortunate reality to Smith & Wesson.

In the early 1900's, pocket pistols were selling like 'hotcakes'. Most of the larger American gun companies were producing a variety of .25, .32, and .380 caliber automatics. About 1913, Smith & Wesson took the plunge, but instead of following the trend, they brought out not only a new gun, but a new cartridge, too!

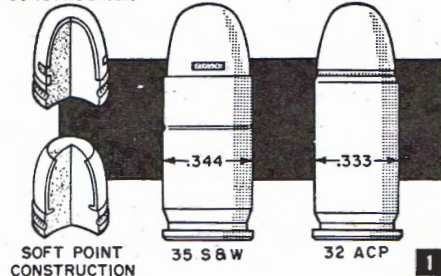
The gun itself was based on a patent by C. P. Clement of Belgium, and, like other Smith & Wesson products, was beautifully made and finished.

The design had less to recommend it than that of many of its foreign and American contemporaries. For instance, while the gun had numerous safety features, the two main safeties were awkwardly placed. The manual safety is a small wheel which projects from the backstrap, making it almost impossible to remove or apply with the gun held in firing position. If the squeeze safety had been placed in the backstrap, it would have operated almost automatically, but since it was in front, it took a conscious effort to release it. The recoil spring disconnecting catch is another feature that is novel but cumbersome. Since the slide is very light, a

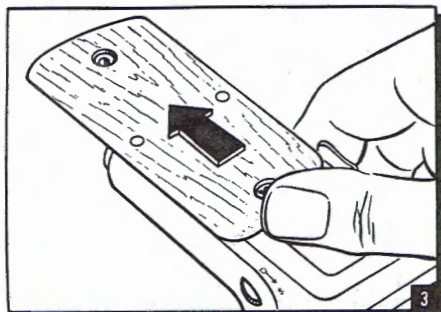
heavy recoil spring is necessary to snub its high recoil speed. This spring makes the gun very difficult to cock. Therefore the gun was so made that by pressing the catch on the slide crosswise, the recoil spring is disconnected from the slide. Then the internal hammer can be cocked and a fresh cartridge chambered without working against the heavy recoil spring. This feature is excellent if you are thoroughly familiar with the gun or not too familiar with other automatics, as it takes a conscious effort to cock and load as compared with other common pocket automatics. The above features seem to make the gun a good safe house pistol, but not



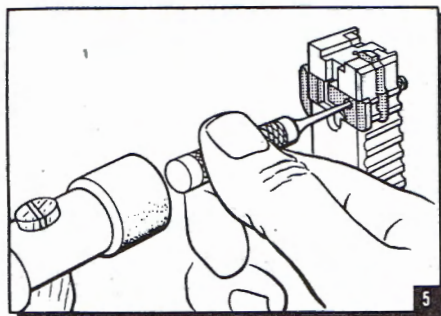
# JACKETED CONSTRUCTION



Except for the unusual construction of the bullets and the few thousandths increase in diameter, the .35 Smith & Wesson cartridge could pass for a .32 automatic. The idea was to make a jacketed bullet that would operate through a magazine without deforming, yet have only the lead touch the rifling to decrease barrel wear. Ballistically, the .32 ACP is a bit more powerful



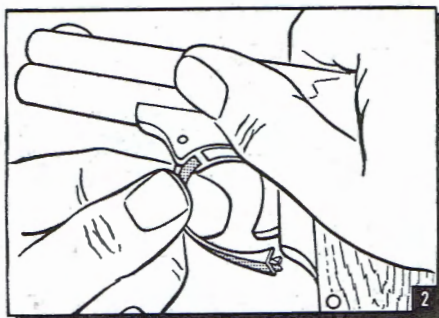
Unlike most pocket pistols, when the grip screws (60) are removed, the grips (59) remain fixed tightly to the frame. Since they are riveted to a metal plate that is dove-tailed into the frame, the grip (59) must be pushed off as shown. Never try to pry them free; it will ruin them



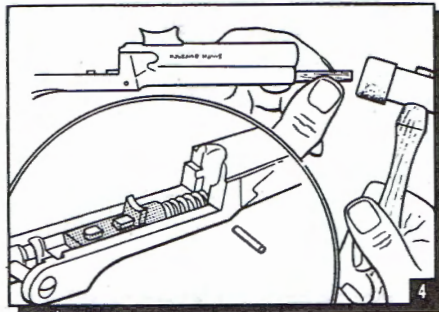
The extractor pin (18) is the key to the bolt (12) takedown. It must be driven out through the hole in the bolt release catch (21) with a thin punch. With this pin out, the extractor (9), its spring (11) and plunger (10), and the bolt release catch (21) with its spring (19) and plunger (20), will be free

one to be carried for defense. The operating procedure is too slow. So, in spite of its famous name, and the flawless workmanship, only a little over 8,000 pistols were sold between 1913 and 1921, when production was stopped.

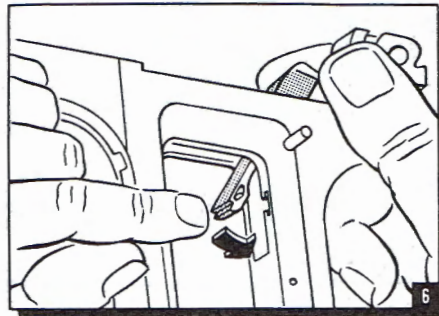
There are at least two common variations. In the earlier model, the magazine latch works from side to side, but in the later guns, it works from front



The takedown system is the best feature of the Smith & Wesson .35 automatic. Simply pull down on the rear of the trigger guard as shown. When free, swing it forward and lift up the front end of the barrel. The gun can then be cleaned from the breech without fear of losing any parts



Since the recoil spring (6) is part of a captive assembly, it cannot fly out when the bushing retaining pin (2) is removed. When removing the spring rod bushing (5), replace the pivot screw (3) to prevent the assembly being damaged when it is driven out. Then, with a wooden dowel, drive the assembly out as shown

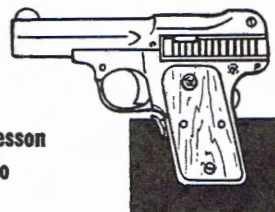


After the hammer (26) and sear (29) have been pinned together, insert the hammer into the frame through the magazine opening. Insert the hammer pin (52) and swing the sear back into the frame as shown. Do not try to insert the assembly through the backstrap opening

to rear, or in the conventional manner. The takedown procedure for cleaning is simple, but beyond that care must be taken since the gun has several tiny spring-loaded parts.

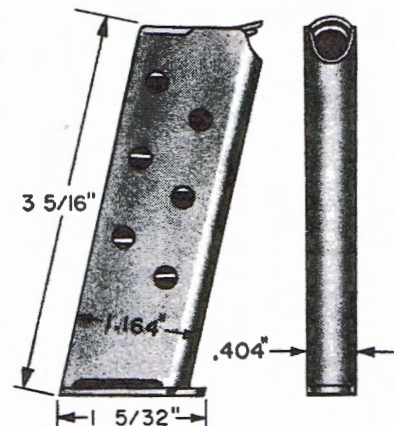
The .35 caliber ammunition is scarce, since it has not been manufactured since 1940. The gun will feed, fire, and eject .32 caliber ACP ammunition. The cases will bulge, but usually not enough to rupture.

Smith & Wesson  
.35 Cal. Auto

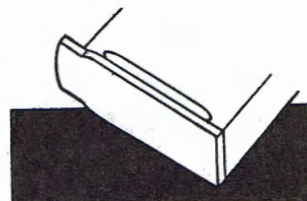


## PISTOL MAGAZINES

One of a series



While the Smith & Wesson .35 cal. automatics were beautifully made and finished, the odd caliber is considered the main reason for its downfall. Produced between 1913 and 1921, it was never very popular. Actually, it is a better gun to have around the house than for on-the-person use. The safeties are awkward and the recoil spring very strong, making it difficult to pull back the slide unless the spring disconnecting latch is used.



The Smith & Wesson .35 cal. magazine is no larger than the conventional .32 cal. magazine and will readily interchange with the rare Smith & Wesson .32 automatic. It is difficult to identify, since it is not marked, but it features the long crimp above the floorplate. This is characteristic of only the Smith & Wesson magazine.

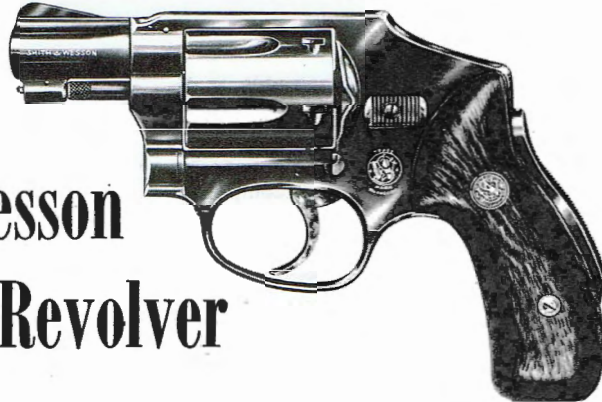


With the possible exception of the nearness of the witness holes to the back of the magazine, there is little else to distinguish it from the average .32 cal. magazine.—E. J. HOFFSCHMIDT



# Smith & Wesson Centennial Revolver

By James M. Triggs



**I**N 1888 Smith & Wesson produced a hammerless revolver, a great stride in handgun design for personal defense. It was an arm which guarded against accidental discharge, and in it were all the best features of Smith & Wesson's already famous line of revolvers. The Safety Hammerless "New Departure"

JAMES M. TRIGGS, a writer-illustrator of Mamaroneck, N. Y., has been a gun collector for 15 years.

was of hinged frame design, and was made to chamber a relatively mild blackpowder cartridge.

After World War II it became obvious that there still existed a certain demand for a so-called hammerless revolver. Smith & Wesson were receiving orders for an arm of that type but were keenly aware that a newly designed gun of the same type as the New Departure must be sturdy enough to handle

today's ammunition in complete safety.

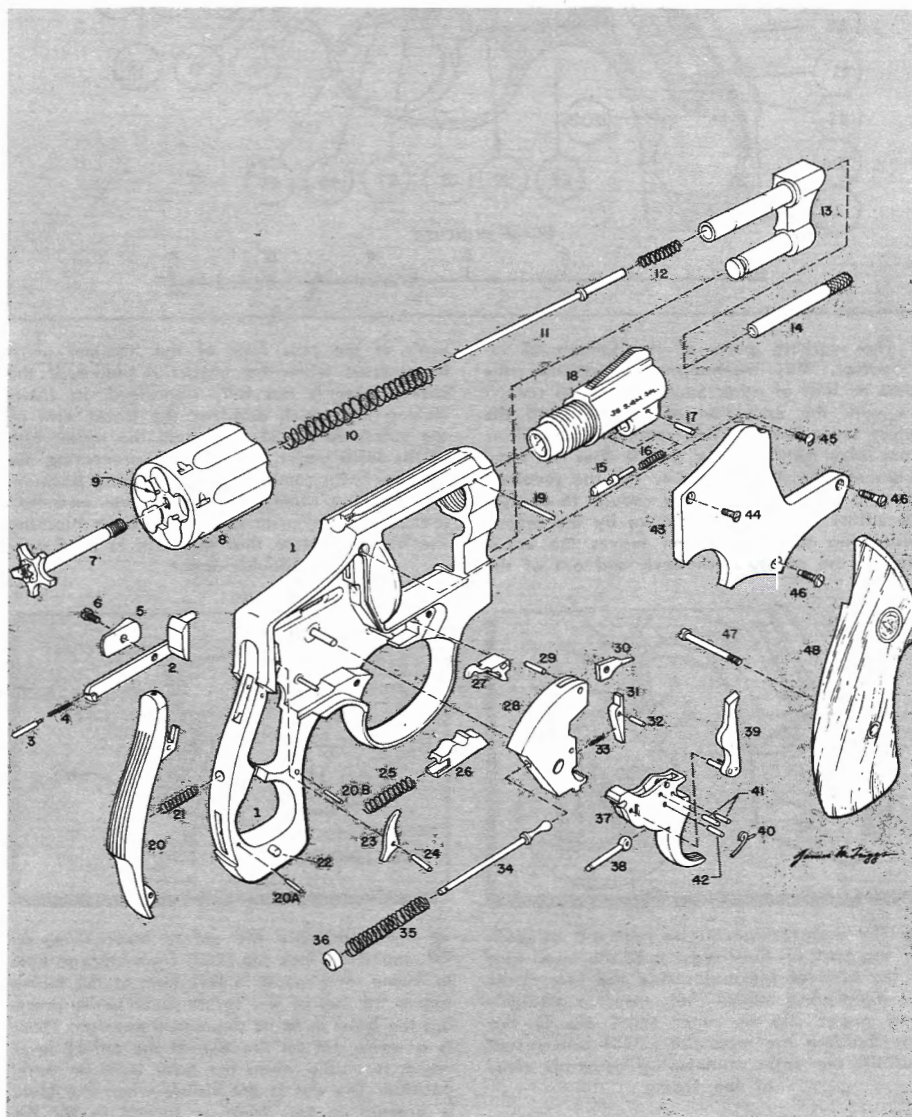
As a result, S&W decided to produce an entirely new gun. It was named the "Centennial" because its issuance fell at about the time the company was celebrating its 100th Anniversary. The little Centennial is of solid-frame construction, capable of handling the modern .38 S&W Special cartridge, and in it are combined the outstanding features of its older counterpart. It is optionally available with either steel or alloy frame, with the latter version known as the 'Airweight Centennial'.

The Centennial's acceptance was immediate with two classes of users—law-enforcement officers, especially detectives, who found it an excellent weapon for carrying in the pocket, particularly in the winter where an overcoat pocket was readily accessible. The fact that a gun such as the Centennial can be fired from inside the pocket without catching in the lining, or the hammer hanging up in the clothing, can be an advantage in a critical spot.

The second class of user is plain John

## PARTS LEGEND

1. Frame
2. Bolt
3. Bolt plunger
4. Bolt plunger spring
5. Thumbpiece
6. Thumbpiece screw
7. Extractor
8. Cylinder
9. Dowel pin (2)
10. Extractor spring
11. Center pin
12. Center pin spring
13. Yoke
14. Extractor rod
15. Locking bolt
16. Locking bolt spring
17. Locking bolt pin
18. Barrel
19. Barrel pin
20. Safety lever
- 20A. Safety lever pin
- 20B. Safety lever lock pin (in storage hole)
21. Safety lever spring
22. Stock pin
23. Safety latch
24. Safety latch pin
25. Rebound slide spring
26. Rebound slide
27. Cylinder stop
28. Hammer
29. Hammer nose rivet
30. Hammer nose
31. Sear
32. Sear pin
33. Sear spring
34. Mainspring rod
35. Mainspring
36. Mainspring swivel
37. Trigger
38. Trigger lever
39. Hand
40. Hand torsion spring
41. Hand torsion spring pins (2)
42. Trigger lever pin
43. Side-plate
44. Flat head side-plate screw (1)
45. Large head side-plate screw
46. Small head side-plate & yoke screws (2)
47. Stock screw
48. Stock (2)





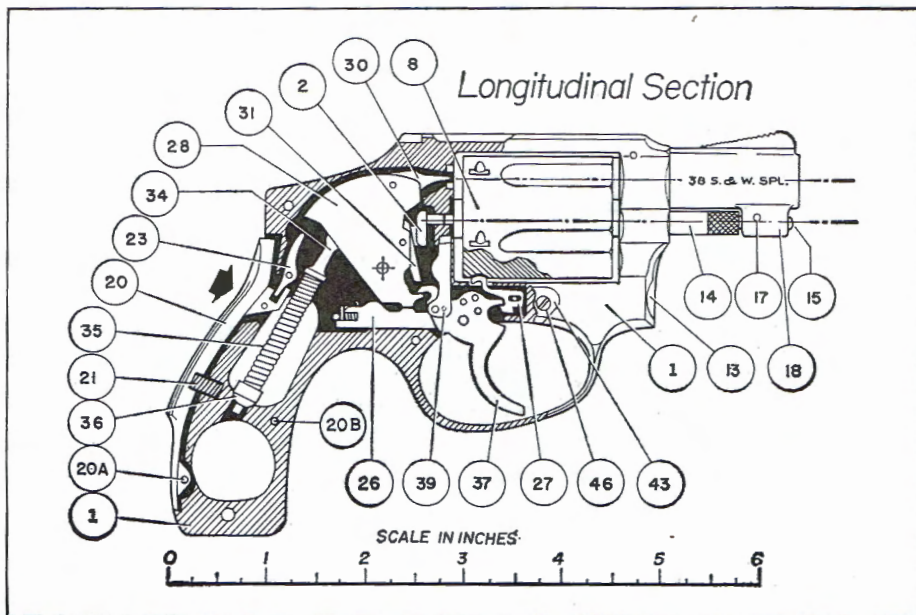
Citizen, who wants a weapon for personal and home defense. The Centennial is an efficient gun for this purpose.

#### DISASSEMBLY PROCEDURE

Disassembly of the S&W Centennial follows generally that of other S&W revolvers. Remove the stock screw (47), stocks, and side-plate screws (44, 45, 46) and, holding the gun with the side-plate up, tap the frame gently with a wooden or fiber hammer until the side-plate works loose. Prying off the side-plate usually results in burring its edges and damaging the finish. The cylinder and yoke assembly are removed by swinging out the cylinder and pulling the yoke forward and out of the frame.

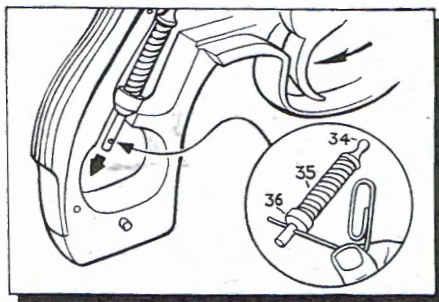
Remove the mainspring assembly as detailed in Fig. 2. Remove the rebound slide (26) and spring (25) by lifting the rear of the slide up and free of the pin in the frame. Care should be taken in this operation to prevent the compressed spring escaping once it is free from its pin.

The remaining interior parts of the revolver are easily removed. The safety lever (20) and spring (21) may be removed by gently drifting out the safety lever pin (20A). The safety latch (23) may be removed by drifting out its pin (24) also. Note that all S&W Centennial revolvers are supplied with a lock pin (20B) carried in a recess in the frame adjacent to the base of the mainspring. Installation of the lock pin in order to deactivate the safety lever is detailed in Fig. 3.

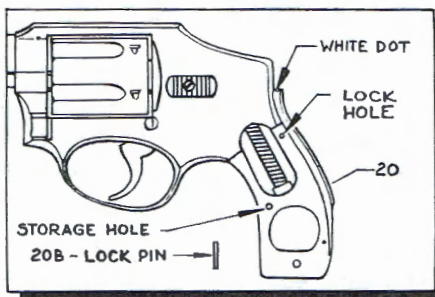


**1** The working parts of the Centennial revolver. This mechanism is basically the same as that of other Smith & Wesson revolvers with the exception of hammer and the safety lever feature. This revolver also differs from other S&W arms in that it does not have a hammer block. In order to fire the revolver, the grip must be held firmly enough to depress the safety lever (20) as shown by the arrow. Depressing the safety lever moves the upper arm of the safety latch back and out of the

path of the rear face of the hammer as it is retracted when the trigger is pulled. If the safety lever is not fully depressed, its interlocking lug which engages the lower arm of the safety latch (23) will hold the upper arm of the latch under the hammer, preventing the hammer from coming back to a firing position. The drawing shows the safety lever extended (not depressed) with the safety latch blocking the hammer. Note that this arm is fired only double-action



**2** The mainspring can be removed by pulling back on the trigger until the small hole at the base of the mainspring rod (34) clears the mainspring swivel (36). Insert a straightened paper clip or other small pin in this hole, holding the mainspring (35) compressed and lift the entire mainspring assembly clear of the frame

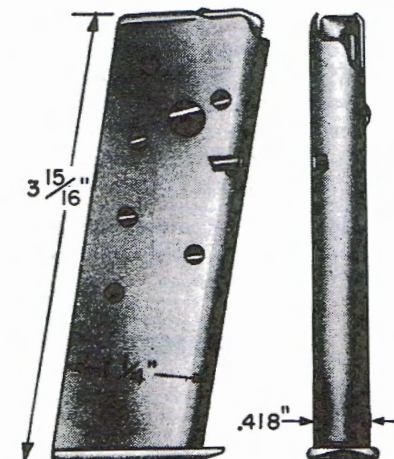


**3** To deactivate the safety lever (20), remove the lock pin (20B) from storage hole in frame, and insert in lock hole in the frame above the lug of the safety lever while pressing the lever in to its depressed position. There is a white dot on the top of the safety lever which is visible when the lever is in its 'safe' position. The dot is not visible when the lever is pressed in for firing or locked in by the lock pin

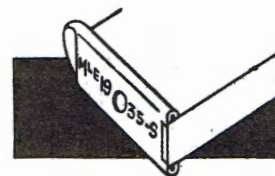


## PISTOL MAGAZINES

One of a series



It is unfortunate that French military automatic pistols are chambered for the uncommon 7.65 mm. Long pistol cartridge. Ammunition is so scarce that these interesting guns are not fully appreciated. The Model 1935S was manufactured at the government arsenal at St. Etienne. It is an excellent gun, with a simple rugged mechanism and a grip that is second to none. These guns are generally finished with a blue-black paint that is far more rust resistant than the common blued finish.



Like the rest of the gun, the 1935S magazine is usually marked as shown. Unlike the magazine of the 1935A Model, the floorplate is removable. Press in the center button and the floorplate can be slid off the front of the magazine.



The follower is made from a sheet-steel stamping and the left side of the magazine is cut down to allow the follower to operate the hold-open latch. The small half-round protrusion on the left-hand side operates the magazine safety.—E. J. HOFFSCHMIDT



# Smith & Wesson Escort

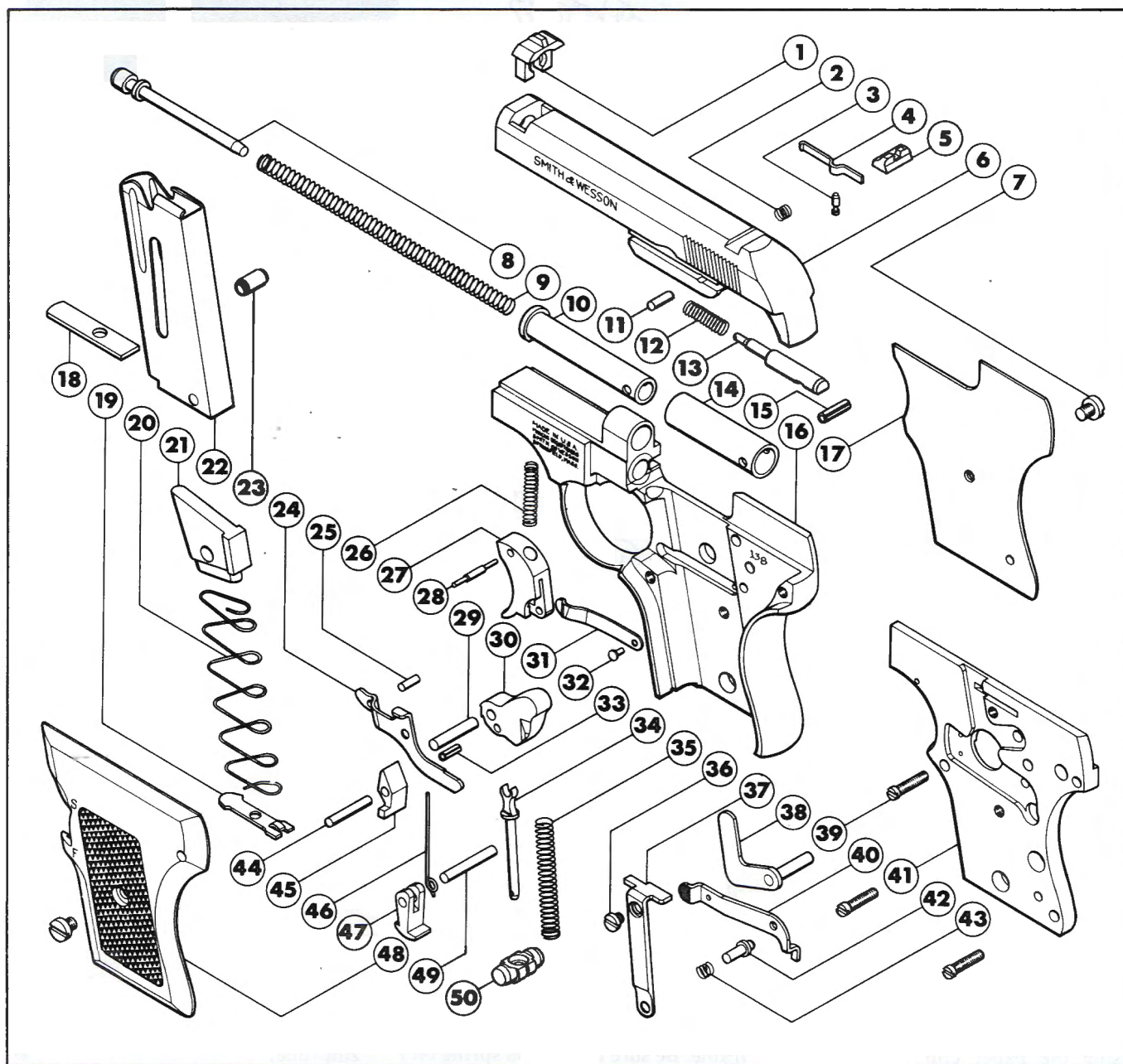
BY DENNIS RIORDAN

INTRODUCED in March, 1970, the Model 61 Smith & Wesson Escort is a small, lightweight autoloading pistol for the .22 LR cartridge. It is blowback operated with a 2½" barrel fixed in its aluminum frame. The grips and follower for the five-round magazine are made of molded plastic. The pistol is 4<sup>13</sup>/<sub>16</sub>" long and weighs 14 ozs.

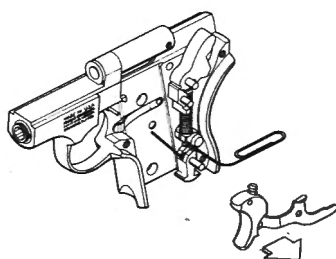
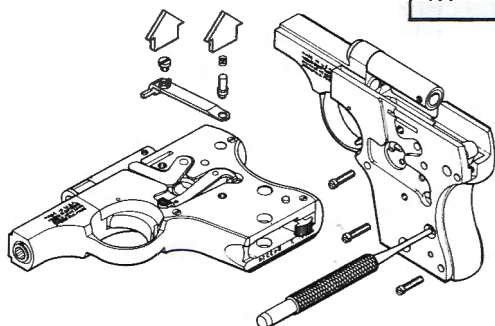
There are four versions. The original Model 16 carries serial numbers from B1,001 to B7,800. In May, 1970, a trigger block magazine safety was added and the result called the Model 61-1. The serial number range of this version is B7,801—B9,850. One lot was made with serial numbers from B1—B500. These low-numbered guns are not first production of the Model 61 but a special run of the Model 61-

1. In September, 1970, a nut was added to secure the muzzle end of the barrel in the frame. This is the Model 61-2. Serial numbers range from B9,850—B40,000. In July, 1971, a forged aluminum frame which extends upward to hold the recoil spring guide tube replaced the earlier cast frame. The serial number range is B40,001—B65,438. This final version illustrated here is known as the Model 61-3. The four versions are identified by the model number stamped at the bottom of the grip behind the serial number.

The Model 61 was officially discontinued in March, 1973. Limited quantities were assembled from existing parts until February, 1974. Total production of all versions was nearly 65,000.







# Parts Legend

1. Front sight	18. Magazine buttplate	35. Mainspring
2. Extractor spring	19. Magazine spring plate	36. Ejector screw
3. Extractor pin	20. Magazine spring	37. Ejector
4. Extractor	21. Magazine follower	38. Disconnecter
5. Rear sight	22. Magazine tube	39. Side-plate screw (3)
6. Slide	23. Magazine follower pin	40. Manual safety lever
7. Stock screw (2)	24. Trigger bar	41. Side-plate
8. Recoil spring guide	25. Trigger bar pin	42. Indicator plunger
9. Recoil spring	26. Trigger bar spring	43. Indicator plunger spring
10. Recoil spring guide tube	27. Trigger	44. Sear pin
11. Firing pin retaining pin	28. Trigger pin	45. Sear
12. Firing pin spring	29. Hammer pin	46. Spring, magazine catch and sear
13. Firing pin	30. Hammer	47. Magazine catch
14. Retainer tube	31. Trigger block	48. Stock-left hand
15. Recoil spring stop pin	32. Trigger block rivet	49. Magazine catch pin
16. Frame	33. Stirrup pin	50. Mainspring retainer
17. Stock-right hand	34. Stirrup	

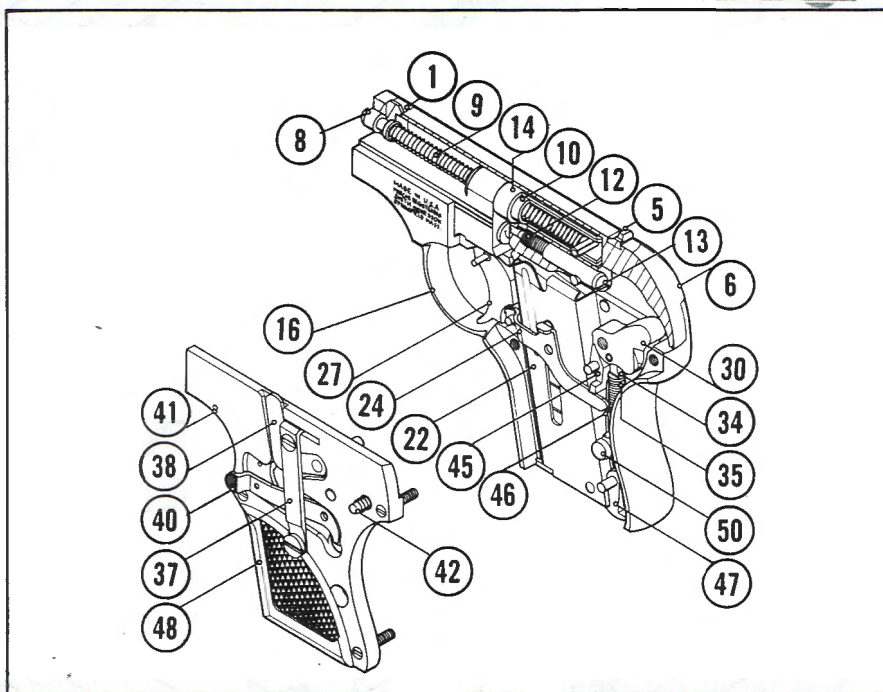
## Disassembly Procedure:

The Model 61 may be field stripped without tools. The front sight (1) is the key to disassembly. Remove the magazine and pull back the slide (6) to insure there is no cartridge in the chamber. Release the slide and press inward on the end of the recoil spring guide (8) which projects above the muzzle. Lift out the front sight while holding the spring guide in.

Pull the recoil spring (9) and guide out of the slide. The slide may then be removed by moving it to its extreme rearward position, then lifting it straight up off the frame. Further disassembly is not required for routine cleaning.

To strip the frame, place the assembly right side down on a bench. Remove the left stock screw and lift off the stock. Withdraw the indicator plunger (42) and spring (43). Unscrew the ejector screw (36) and lift off the ejector (37). Remove the disconnecter (38) and safety lever (40). Unscrew the side-plate screws (39) and remove side-plate (41) by grasping at the top and bottom, working it off slowly and evenly. Do not allow the four frame pins or the mainspring retainer (50) to come out. It may be necessary to hold them down with a punch.

To disassemble the trigger mechanism, insert a straightened paper clip through the hole near the tip of the stirrup pin (33). Thumb back the hammer (30) and trip the sear (45), using the paper clip to check the



mainspring (35). Pull out the trigger (27), trigger bar (24), and spring (26) as an assembly. Unhook the torsion spring (46) from the sear. The remaining parts are easily removed from the frame.

In reassembly, it may be necessary to align the hammer pin (20) and mainspring retainer (50) with the side-plate holes by using a punch inserted between the side-plate and frame. Be sure the torsion spring (46)

which operates the magazine catch and sear is installed with the loop toward the rear.

To disassemble the magazine, pass a punch through the hole in the buttplate (18) to depress the spring plate (19). Slide out buttplate and ease out spring plate and spring (20). Remove follower (21) by pushing out follower pin (23) after aligning it with disassembly hole in right side of magazine tube. ■



THE Smith & Wesson K22 Masterpiece revolver was introduced in 1940, but the war put a crimp in target pistol production so that in 1947 the redesigned postwar Masterpiece series was introduced. This group included the K22, K32, and K38. The guns in this series were the same size and shape but they varied in weight. In 1949, in

answer to the demands of target shooters, the heavy Masterpiece line hit the market. Now the K Masterpieces all had the same loaded weight. A serious shooter could shift from .22 to .32 or .38 without any change in feel or weight. Target stocks and a low broad hammer were available at extra cost.

Smith & Wesson revolvers are com-

paratively simple to repair, mainly because they will operate without the sideplate, allowing a full view of what makes them tick. Malfunctions can then be seen and corrected. But removing the sideplate can be difficult at times. Obviously there is a good chance of marring the finish if the sideplate is pried off. The factory recommends that the gun be held with the sideplate up and the rear tang of the frame lightly rapped with a wood or leather mallet until the sideplate is jarred free.

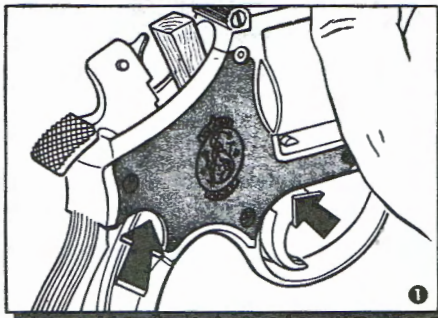
Of course the grips must be removed before attempting this. These, too, must not be pried off. Simply loosen the stock screw until the head clears the stock, then use the screw to push off the right stock. The left stock can then be easily freed by pushing on it through the frame from the right.

Due to the corrosion caused by the gas that escapes between the barrel and cylinder, extra care must be taken to clean the frame just above the cylinder at the end of the barrel, the nose of the hammer, and the firing pin channel.

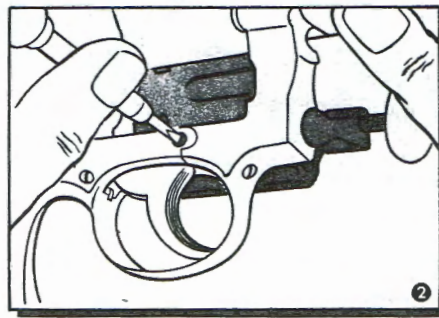
By E. J. Hoffschmidt



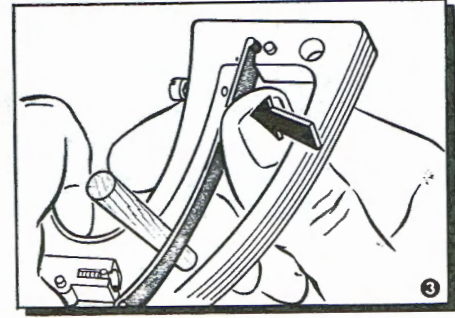
## Smith & Wesson K38 Heavyweight Masterpiece



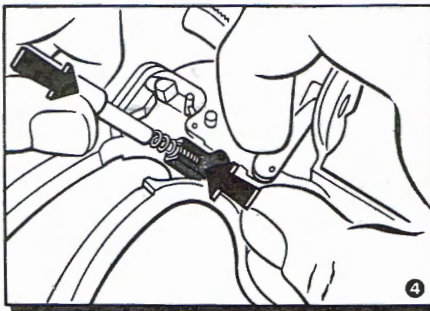
After removing the sideplate screws (39, 40, 41, 41a), tap the frame lightly with a wood or leather mallet to jar the sideplate (38) loose. If it is rusted in, it must be wedged up with a hard wood wedge and pried out evenly to prevent damage to plate or frame pins



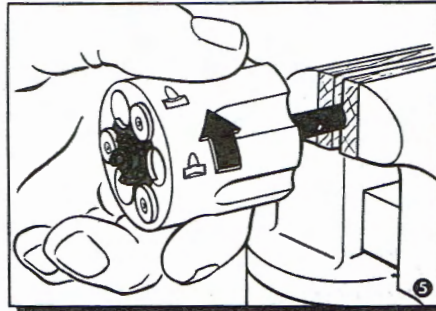
To remove the cylinder assembly, unscrew the small head plate screw (40). Then swing out the cylinder assembly and ease it forward out of the frame. This screw is sometimes filed on the end to give a close fit; be sure to replace it in the same position when reassembling



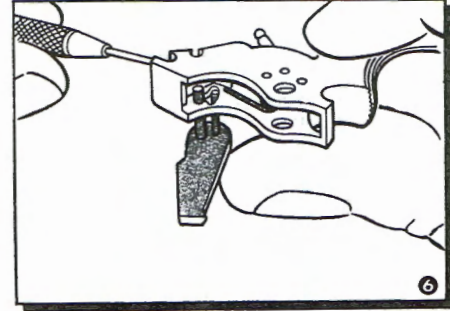
When removing the mainspring (53), remove the strain screw (51) and push the spring out of its slot. To replace the mainspring, hook it to the hammer stirrup (46), and spring it into place over a piece of 1/4-inch dowel as shown and tighten the strain screw (51)



The rebound slide (49) and spring (50) can be removed by lifting the rear section free of the stud in the frame. Keep a cloth over the gun to trap the spring and prevent injury. Replace it by pushing the spring (50) inside the rebound slide (49) and down behind the frame stud

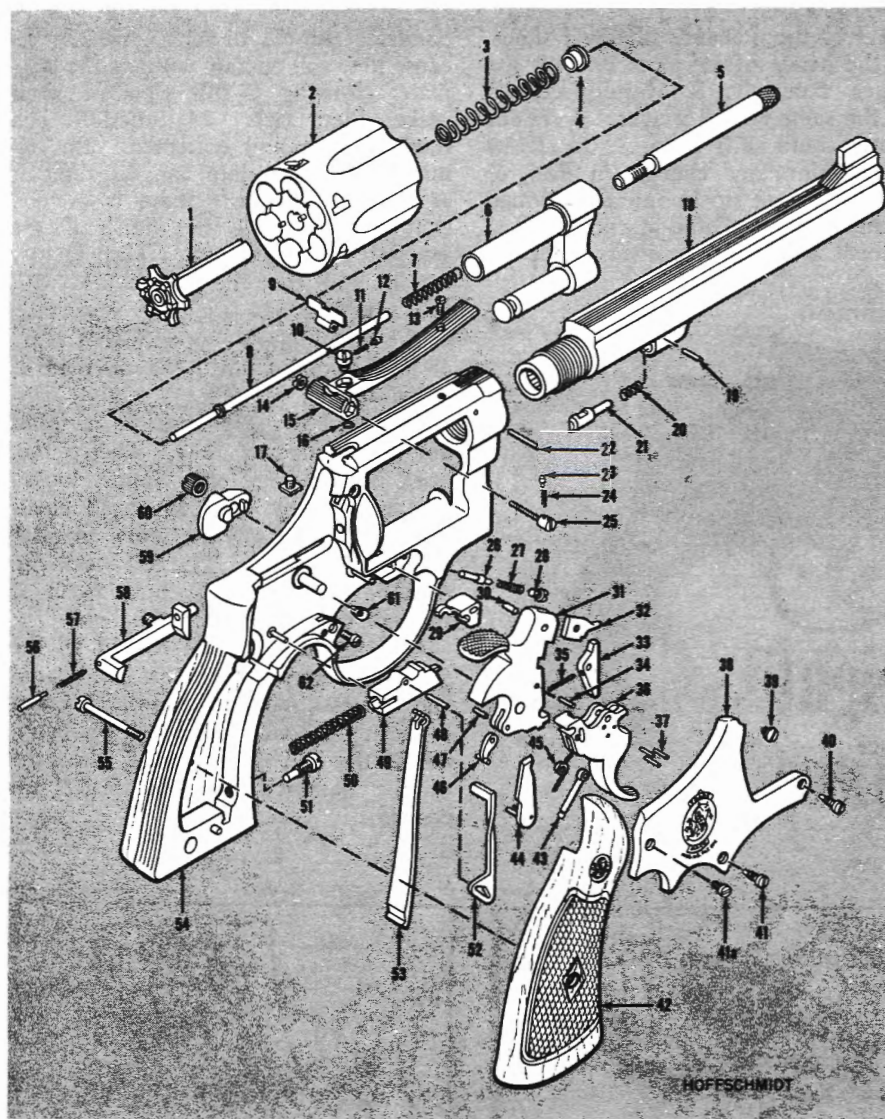


The extractor may be removed by holding the extractor rod (5) between wooden jaws in the vise and turning the cylinder as shown. Keep a few empty cartridges in the chamber to prevent strain on the cylinder spline and extractor guide pins when performing this task



When replacing the hand (44) in the trigger (36), it is necessary to hold up the tail of the hand spring (45) with a small screwdriver while the hand pin is pushed into place as shown. The trigger and hand are then put in the gun as an assembly





## LEGEND

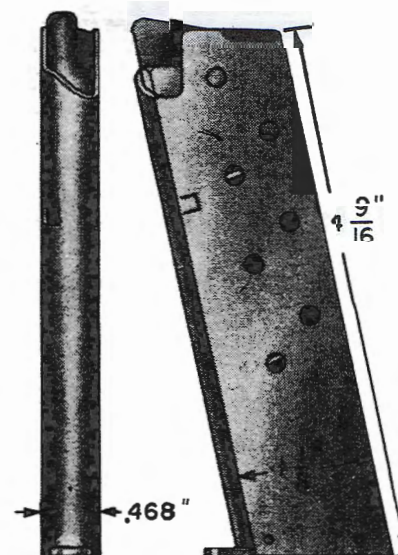
- |                                  |                                  |
|----------------------------------|----------------------------------|
| 1. Extractor                     | 31. Hammer                       |
| 2. Cylinder                      | 32. Hammer nose                  |
| 3. Extractor spring              | 33. Sear                         |
| 4. Extractor rod collar          | 34. Sear pin                     |
| 5. Extractor rod                 | 35. Sear spring                  |
| 6. Yoke                          | 36. Trigger                      |
| 7. Center pin spring             | 37. Trigger pins                 |
| 8. Center pin                    | 38. Sideplate                    |
| 9. Sight slide                   | 39. Large head plate screw       |
| 10. Sight elevating nut          | 40. Small head plate screw       |
| 11. Sight leaf plunger spring    | 41. Small head plate screw       |
| 12. Sight leaf plunger           | 41a. Small flat head plate screw |
| 13. Sight leaf screw             | 42. Stock, right-hand            |
| 14. Windage screw nut            | 43. Trigger lever                |
| 15. Sight leaf                   | 44. Hand                         |
| 16. Windage screw spring clip    | 45. Hand spring                  |
| 17. Sight elevating stud         | 46. Hammer stirrup               |
| 18. Barrel                       | 47. Hammer stirrup pin           |
| 19. Locking bolt pin             | 48. Rebound slide pin            |
| 20. Locking bolt spring          | 49. Rebound slide                |
| 21. Locking bolt                 | 50. Rebound slide spring         |
| 22. Barrel pin                   | 51. Strain screw                 |
| 23. Sight leaf plunger           | 52. Hammer block                 |
| 24. Sight leaf plunger spring    | 53. Mainspring                   |
| 25. Windage screw                | 54. Frame                        |
| 26. Cylinder stop plunger        | 55. Stock screw                  |
| 27. Cylinder stop plunger spring | 56. Bolt plunger                 |
| 28. Cylinder stop screw          | 57. Bolt plunger spring          |
| 29. Cylinder stop                | 58. Bolt                         |
| 30. Hammer nose rivet            | 59. Thumbpiece                   |
|                                  | 60. Thumbpiece nut               |
|                                  | 61. Trigger stop                 |
|                                  | 62. Trigger stop screw           |

Polish Radom  
Cal. 9 mm. Luger

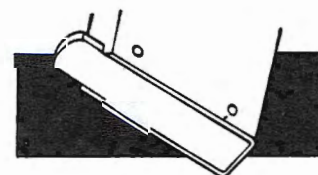


## PISTOL MAGAZINES

One of a series



In 1935, Poland began production on what might be called a modernized version of the Colt 1911 automatic. This was the P-35, better known as the Radom. Pre-World War II Radoms were beautifully made and finished, but with the coming of World War II the guns deteriorated. Wartime pressure eliminated the shoulder stock and the hold-open latch, as well as the fine finish. The Radom, however, remains a strong, reliable design.



Like the rest of the gun, the Radom magazines are strong and well made. The magazines are generally not marked, but can be identified by the location of the magazine catch slot and the shape of the floorplate. The floorplate is riveted to the magazine sides as shown.



The shape of the follower is distinctive. The front edge usually protrudes well up beyond the magazine lips. The follower is pressed from sheet steel and presents a solid appearance.—E. J. HOFFSCHMIDT



# Smith & Wesson Military & Police Revolver

By James M. Triggs

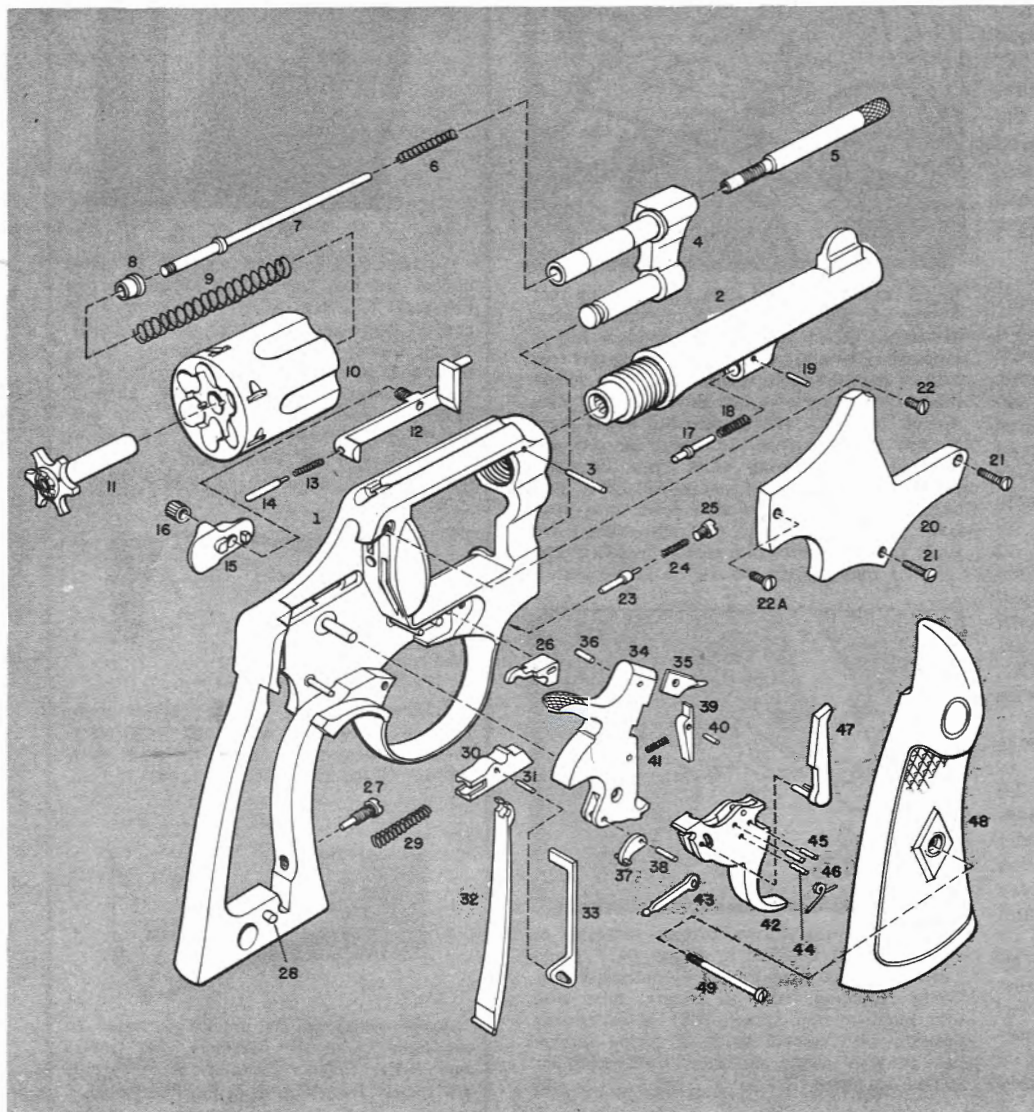
**D**URING the Spanish-American War, Smith & Wesson, Springfield, Mass., was tendered a government contract for 3000 cal. .38 double-action revolvers, of which 2000 were for the Navy and 1000 for the Army. The war ended before delivery of a single gun had been made, but the contract was

not canceled, and first deliveries were eventually made early in 1899. Designated the .38 Hand Ejector, Military & Police Model, this revolver was the first cal. .38 side-swing model to be made by Smith & Wesson. It was chambered for the .38 Colt long cartridge. The military version was made with

6½" barrel and walnut grips. The commercial model had hard rubber grips and 4" barrel.

The improved Model 1902 M&P introduced in that year was chambered for the new cal. .38 S&W Special cartridge, and also featured a front lock for the extractor rod.

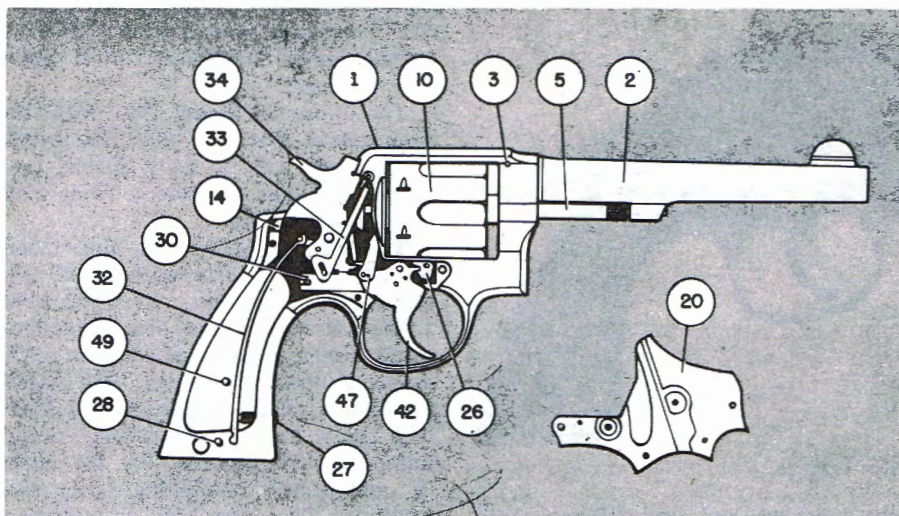
The Model 1905 that superseded the Model 1902 also incorporated significant improvements. By 1942 over 1,000,000 M&P's had been manufactured. Under pressure of wartime need, Smith & Wesson in April 1942 began production of the Victory Model M&P with gray sandblasted finish. Serial numbers were preceded by the letter 'V' and a new numbering series was begun. In December 1944 an improved hammer block was instituted and serial numbers were preceded by the letters 'VS' to indicate incorporation of this feature in the lock mechanism. With the coming of peace, and cancellation of government contracts, Smith & Wesson resumed production of commercial



## Parts Legend

1. Frame
2. Barrel
3. Barrel pin
4. Yoke
5. Extractor rod
6. Center pin spring
7. Center pin
8. Extractor rod collar
9. Extractor spring
10. Cylinder
11. Extractor
12. Bolt
13. Bolt plunger spring
14. Bolt plunger
15. Thumbpiece
16. Thumbpiece nut
17. Locking bolt
18. Locking bolt spring
19. Locking bolt pin
20. Side-plate
21. Side-plate screws, roundhead (2)
22. Side-plate screw, large head (discontinued)
- 22A. Side-plate screw, flathead
23. Cylinder stop plunger
24. Cylinder stop plunger spring
25. Cylinder stop screw
26. Cylinder stop
27. Strain screw
28. Stock pin
29. Rebound slide spring
30. Rebound slide
31. Rebound slide pin
32. Mainspring
33. Hammer block
34. Hammer
35. Hammer nose
36. Hammer nose rivet
37. Stirrup
38. Stirrup pin
39. Sear
40. Sear pin
41. Sear spring
42. Trigger
43. Trigger lever
44. Trigger lever pin
45. Hand spring torsion pins (2)
46. Hand torsion spring
47. Hand
48. Stocks
49. Stock screw





Drawing of revolver with side-plate removed shows proper relationship of interior parts

M&P's but continued the serial number sequence begun in 1942. Serial numbers were preceded by the letter 'S'.

On Oct. 21, 1947, with gun No. S 924,878, the manufacturer instituted an improved short action, and external shape of the hammer was modified for easier cocking.

Production of the 'S' series continued until March 1948 when the present 'C' series was started. It is significant that over 1,000,000 M&P's, including the Victory Model, were manufactured from April 1942 through March 1948. As of this date Smith & Wesson has produced well over 500,000 M&P revolvers in the 'C' series.

#### DISASSEMBLY PROCEDURE

Swing out cylinder, then loosen forward side-plate screw (21) and withdraw cylinder and yoke assembly from frame. Withdraw yoke (4) from cylinder assembly. On older guns with knobbed extractor rod, yoke cannot be removed from cylinder assembly until extractor rod has been removed as in next step.

To disassemble cylinder assembly insert several empty cases in cylinder to prevent strain on extractor (11), then grip extractor rod (5) with pliers (pad jaws) and turn cylinder until extractor rod is free of extractor. Withdraw extractor rod, yoke, extractor rod collar (8), extractor spring (9), center pin (7) with center pin spring (6), and extractor.

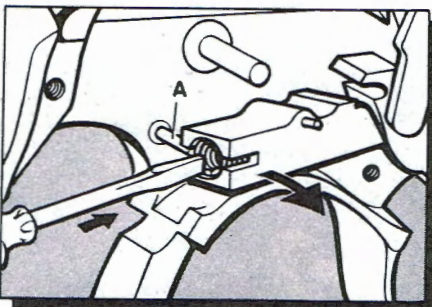
Remove stock screw (49) and stocks (48).

Remove side-plate screws (21 [2], 22, 22A). Side-plate (20) is loosened by tapping opposite surface of frame sharply with a wood or fiber hammer until it can be removed from frame. Attempts to pry out side-plate will deform its edges and those of frame cut.

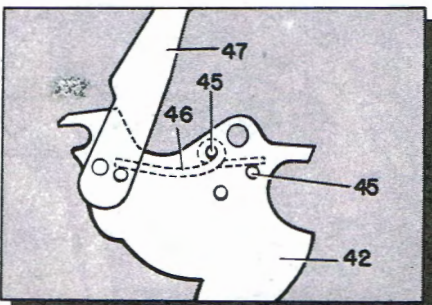
Mainspring (32) is easily removed by loosening strain screw (27). All interior parts of lock mechanism are now easily removed for cleaning or replacement. However, for normal cleaning purposes, it is seldom necessary to carry disassembly

beyond removal of side-plate. The accompanying drawings point out some methods for further disassembly.

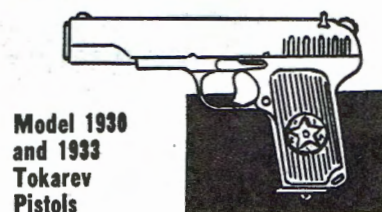
Exercise care in reassembly of lock mechanism to replace all parts in proper relationship.



1 To remove rebound slide (30), pry up rear end of slide with blade of small screwdriver but do not allow spring to clear end of rebound slide stud (A) in frame. Compress rear end of rebound slide spring (29) with screwdriver blade as shown and draw rebound slide up off stud (A), taking care not to let compressed spring escape. In replacing rebound slide in frame, spring must again be compressed inside slide so that it will clear stud before slide can be pressed down into position. Note that the stud (A) and other pivot studs in frame are permanently installed and their removal should not be attempted



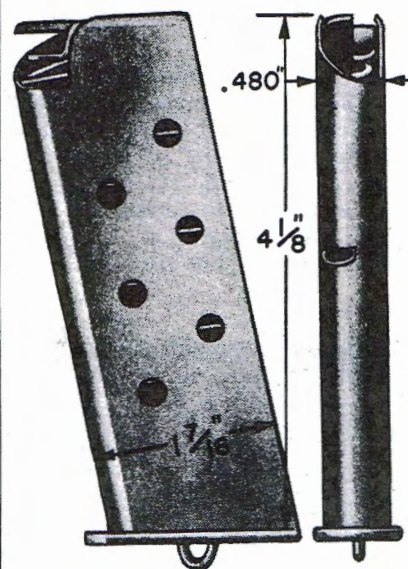
2 The drawing shows proper position of hand (47) installed in trigger (42). Hand can be removed from trigger by pulling it free. When replacing hand in trigger, take care that hand torsion spring (46) is in correct position with respect to hand spring torsion pins (45) in trigger and small torsion pin installed in hand



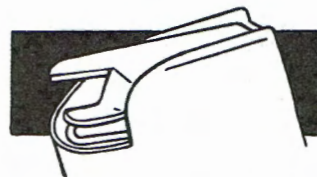
Model 1930  
and 1933  
Tokarev  
Pistols

## PISTOL MAGAZINES

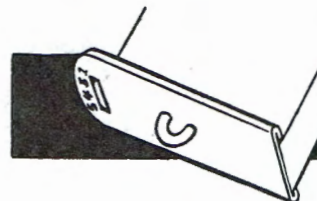
One of a series



Tokarev pistols are basically of Browning design, but lack any safety except for the half-cock. They are only fairly well machined and the parts are not always interchangeable. This is true of the magazines. For best results the magazine number should match the pistol serial number. Tokarevs fire the powerful bottleneck 7.62 mm. Russian and 7.63 mm. Mauser pistol cartridges. They are not as well made as most German and U. S. automatics, but are powerful and reliable.



Tokarev magazines can be recognized by their relatively small width and large front-to-rear dimension. The step in the sheet metal follower is another identifying point.



These magazines are usually numbered on the front lip of the floorplate. The lanyard loop and rectangular floorplate retaining stud are typical features.—E. J. HOFFSCHMIDT



# Smith & Wesson Model 39



By James M. Triggs

THE Model 39 Smith & Wesson, introduced in August 1954, is the first center-fire autoloading pistol of double-action type designed and made for the commercial market by an American firm. Earlier commercial autoloading pistols featuring a double-action mechanism were of European manufacture. Perhaps the most noteworthy of these is the German Walther 9 mm. Heeres (Army) Pistol, designed in 1937 and subsequently adopted as an official German Service pistol, designated Pistole 38. The P. 38 was produced in great quantities by German firms during World War II, and its double-action capability appeals to those who feel the revolver to be a more reliable combat arm than the autoloading pistol. When a cartridge misfires in a double-action revolver, the user has but to pull the trigger to eject the faulty round or hand cock

JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.

the hammer (if the gun has an exposed hammer) before he can again pull the trigger. In either case, the delay incurred can be fatal.

The soldier armed with the double-action pistol is thus in a somewhat more favorable position when a cartridge misfires as he has only to pull the trigger again to deliver a second hammer blow to the cartridge. A secondary advantage of the double-action pistol is that it can be safely carried with a cartridge in the chamber, safety disengaged and hammer down, yet can be fired by merely pulling the trigger.

It was not without good reason then that Smith & Wesson incorporated the double-action feature in the Model 39 pistol. By so doing, they are able to offer a most up-to-date American-made center-fire automatic pistol.

## DISASSEMBLY PROCEDURE

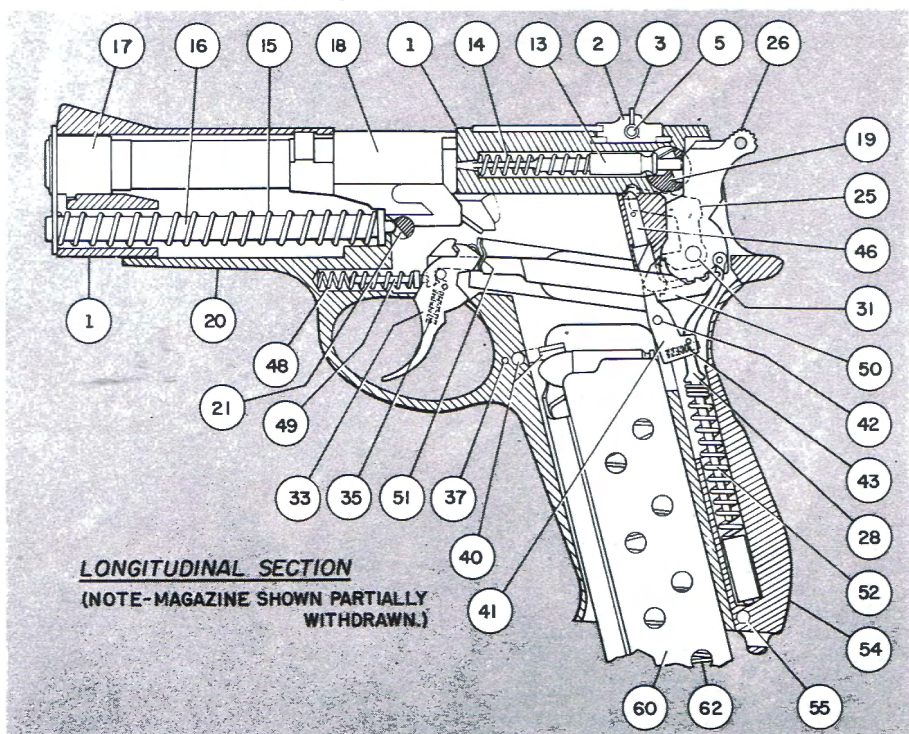
Remove magazine and verify that pistol is unloaded. Put safety in "fire" (upper) position. While pressing in on right hand end of slide stop (21), draw slide (1) to rear until recess in lower left side is aligned with forward end of slide stop. Pull slide

stop out of frame from left and pull slide forward off the frame (20). With slide upside down, compress recoil spring (15) and lift out recoil-spring guide assembly (16) with spring. Remove barrel bushing (17) by rotating its lower portion to left side of slide and draw it forward out of slide. Remove barrel (18) by grasping rear bottom end of barrel and drawing up and outward from slide to the rear. Further disassembly is not recommended as pistol may be properly cleaned and lubricated when thus field-stripped.

To reassemble pistol, replace barrel in slide and replace barrel bushing. Replace recoil spring and recoil spring guide assembly, making sure that recoil spring guide bushing is engaged in small radius cut in barrel lug and properly centered. Failure to center properly will leave recoil spring guide protruding from barrel bushing after assembly. Replace slide on frame, depressing ejector (29) and sear release lever (25) in turn so slide will travel to the rear over them. When slide stop cut on slide is aligned with slide stop hole in frame, insert slide stop and allow slide to return to forward position. Replace magazine. The numbered illustrations at right detail the steps in field-stripping the pistol.

To disassemble slide assembly, press rear end of firing pin (13) in as far as possible with a small punch and grasp forward end of firing pin with a pair of pliers and hold. Turn manual safety thumbpiece (19) half way between "fire" and "safe" positions and press right end of manual safety into slide, withdrawing it from slide from the left. Hold thumb over rear end of firing pin and release grip on pliers. Remove firing pin (13) and firing pin spring (14). Manual safety plunger (10) and spring (9) may be removed from rear end of extractor (8)

Continued on page 215



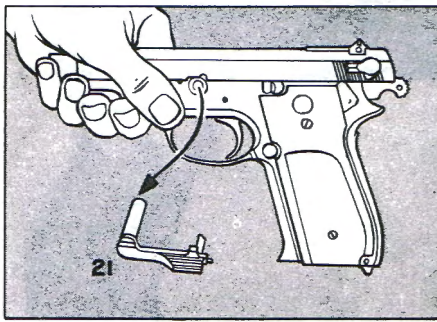
## Specifications

### SMITH & WESSON MODEL 39 DOUBLE-ACTION AUTOMATIC PISTOL

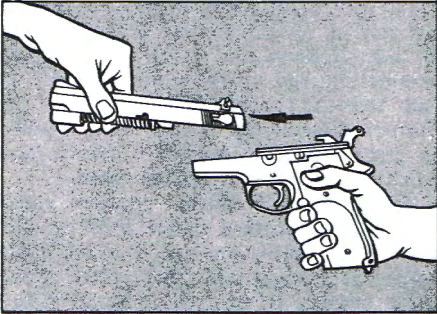
MECHANISM TYPE: Autoloading, double action  
CALIBER: 9 mm. Parabellum (Luger)  
WEIGHT: 28 ozs. with magazine  
RIFLING: 6 groove, right twist  
BARREL LENGTH: 4"  
OVER-ALL LENGTH: 7½"  
MAGAZINE CAPACITY: 8 rounds  
SIGHTS: Front, fixed; rear, adjustable for windage  
SIGHT RADIUS: 5½"



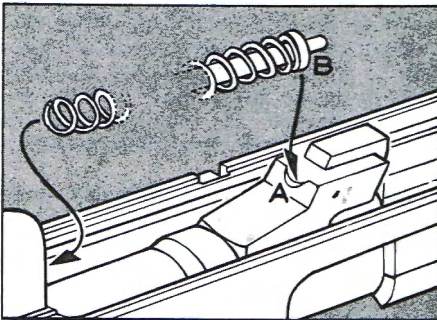
## PARTS LEGEND



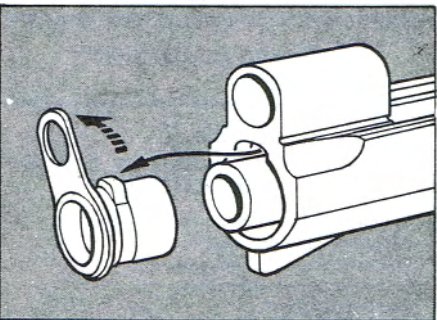
**1** Slide is held rearward firmly with slide stop hole in frame aligned with cut in slide to allow removal of the slide stop (21)



**2** Slide assembly is withdrawn toward front and off frame assembly

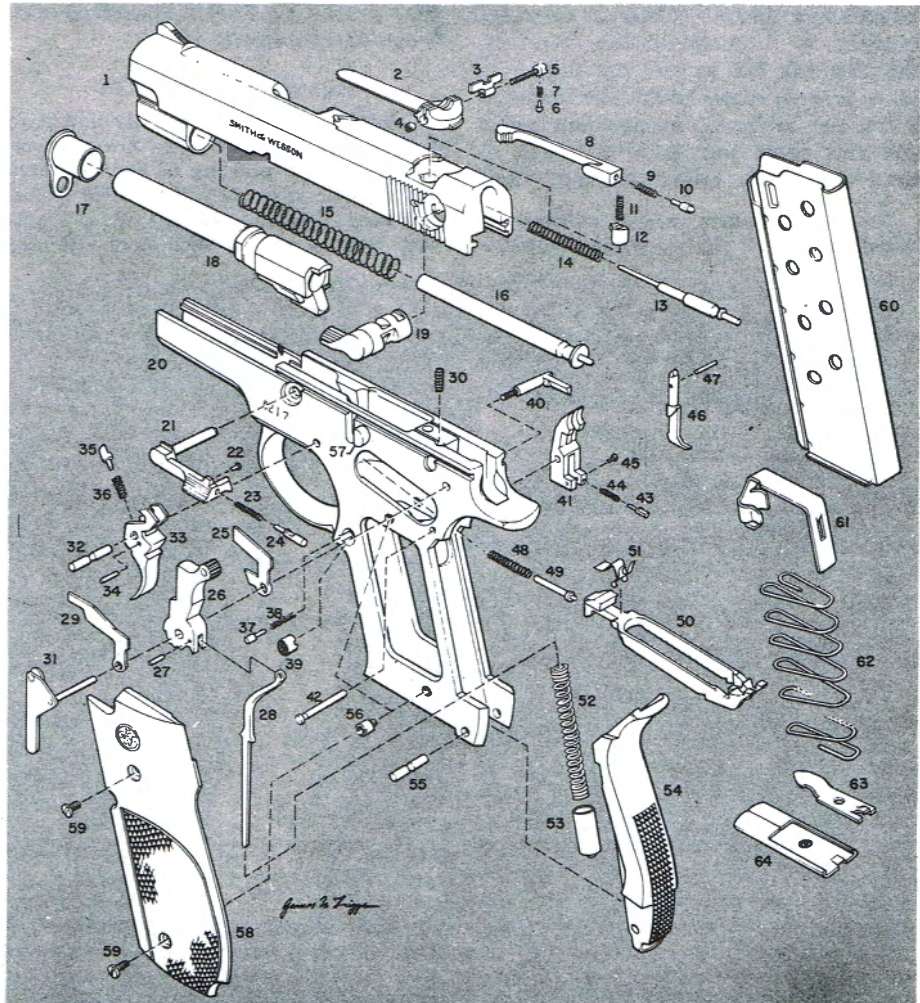


**3** Remove recoil spring and guide assembly from underside of slide. Note radius cut in barrel lug at "A" which receives rim of recoil spring guide "B"

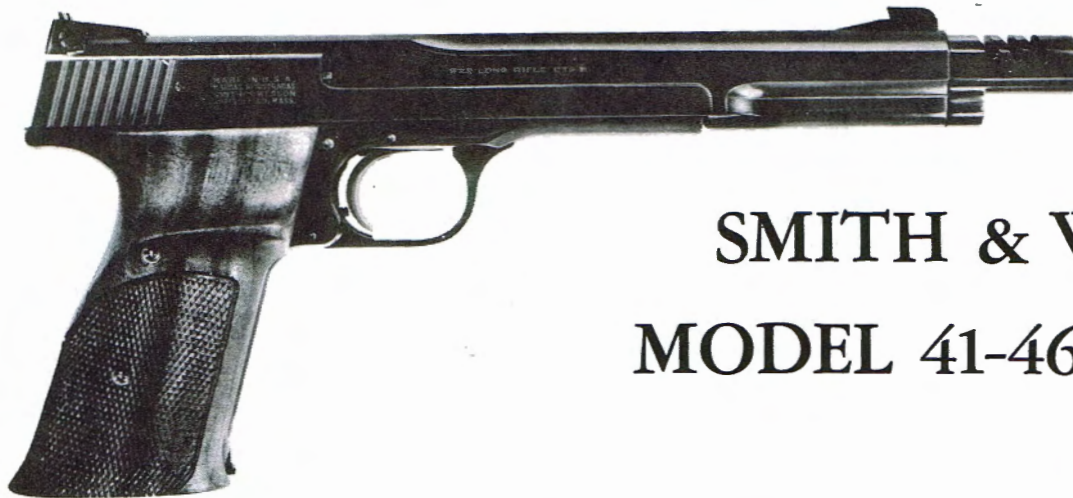


**4** With slide upside down, turn barrel bushing (17) counterclockwise about 45° and withdraw from front of slide. Lift barrel lug upward and draw barrel out of slide to rear

- |  |   |
|--|---|
| 1. Slide                                   | 33. Trigger                                       |
| 2. Rear sight leaf                         | 34. Trigger plunger pin                           |
| 3. Rear sight slide                        | 35. Trigger plunger                               |
| 4. Rear sight windage nut                  | 36. Trigger plunger spring                        |
| 5. Rear sight windage screw                | 37. Magazine catch plunger                        |
| 6. Rear sight windage screw plunger        | 38. Magazine catch plunger spring                 |
| 7. Rear sight windage screw plunger spring | 39. Magazine catch nut                            |
| 8. Extractor                               | 40. Magazine catch                                |
| 9. Manual safety plunger spring            | 41. Sear  |
| 10. Manual safety plunger                  | 42. Sear pin                                      |
| 11. Ejector depressor plunger spring       | 43. Sear plunger                                  |
| 12. Ejector depressor plunger              | 44. Sear plunger spring                           |
| 13. Firing pin                             | 45. Sear plunger pin                              |
| 14. Firing pin spring                      | 46. Disconnecter                                  |
| 15. Recoil spring                          | 47. Disconnecter pin                              |
| 16. Recoil spring guide assembly           | 48. Drawbar plunger spring                        |
| 17. Barrel bushing                         | 49. Drawbar plunger                               |
| 18. Barrel                                 | 50. Drawbar                                       |
| 19. Manual safety                          | 51. Trigger play spring<br>(assembled to drawbar) |
| 20. Frame assembly                         | 52. Mainspring                                    |
| 21. Slide stop                             | 53. Mainspring plunger                            |
| 22. Slide stop plunger pin                 | 54. Insert  |
| 23. Slide stop plunger spring              | 55. Insert pin                                    |
| 24. Slide stop plunger                     | 56. Frame studs (4—assembled to frame)            |
| 25. Sear release lever                     | 57. Slide stop button (assembled to frame)        |
| 26. Hammer                                 | 58. Stocks (right hand not shown)                 |
| 27. Stirrup                                | 59. Stock screws (4)                              |
| 28. Stirrup                                | 60. Magazine tube                                 |
| 29. Ejector                                | 61. Magazine follower                             |
| 30. Ejector spring                         | 62. Magazine spring                               |
| 31. Sideplate assembly                     | 63. Magazine buttplate catch                      |
| 32. Trigger pin                            | 64. Magazine buttplate                            |







# SMITH & WESSON

## MODEL 41-46 PISTOL

By James M. Triggs

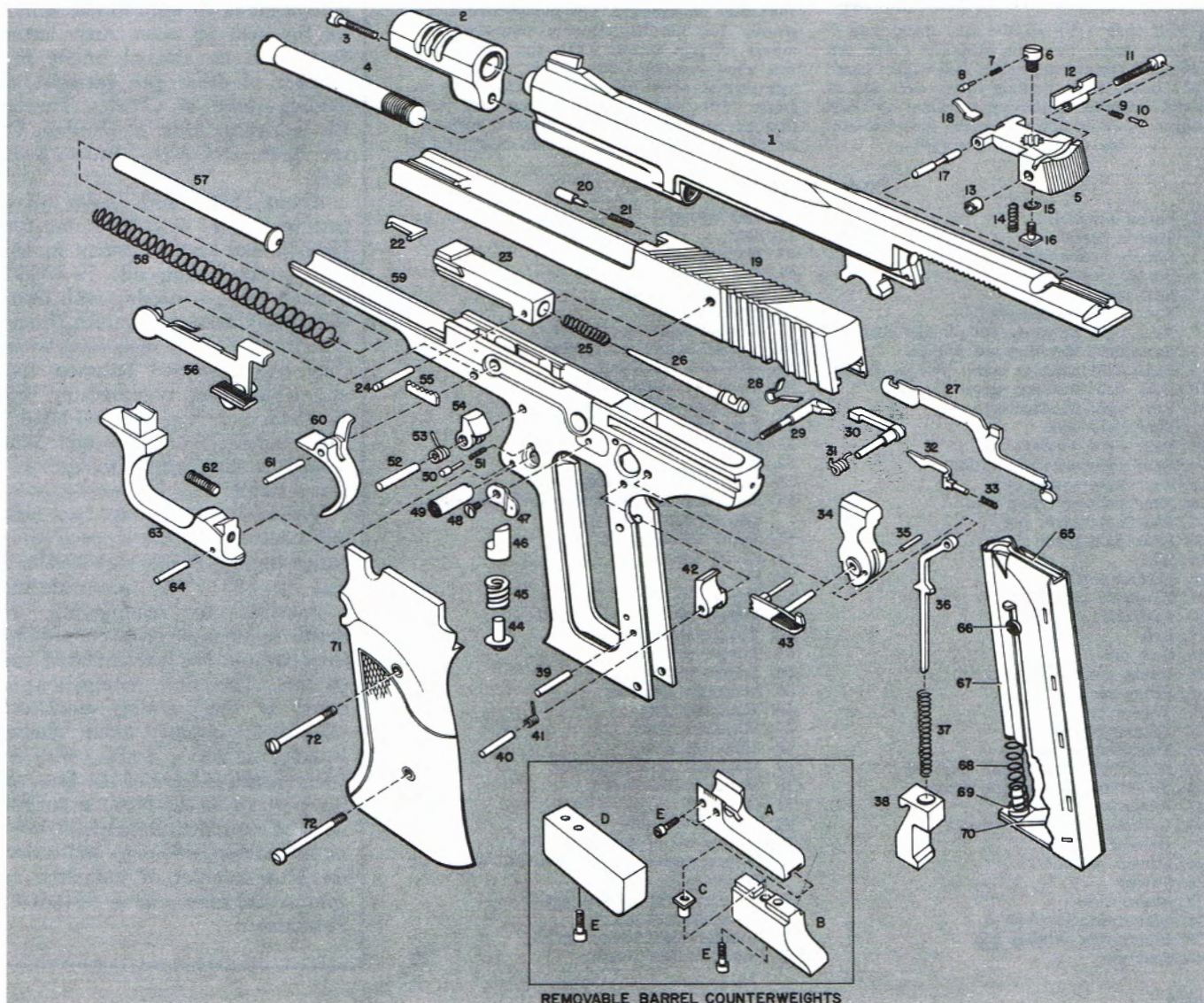
THE Smith & Wesson Model 41 cal. .22 long rifle semi-automatic target pistol, introduced in 1957, was the culmination of a development program begun in 1941. A pilot model was shown that year to shooters at Camp Perry, but U. S. entrance in World War II halted further work on this project which was not resumed until after the war. Production was eventually scheduled for 1950, but the outbreak of the

Korean War in that year again resulted in a postponement, and it was not until late 1957 that Model 41's finally began coming off the assembly line.

Designed to be shot on an out-of-the-box basis, the Model 41 has all the extra refinements appreciated by top-flight competitive shooters. These include a wide trigger adjustable for weight of pull, adjustable trigger stop, fully adjustable rear sight, cocking in-

dicator pin, muzzle brake, and checkered walnut target grips with thumb-rest. Both front and rear sights are mounted on the barrel assembly to eliminate the possibility of a sight alignment error which is sometimes present in guns having the rear sight mounted on a separate breechblock.

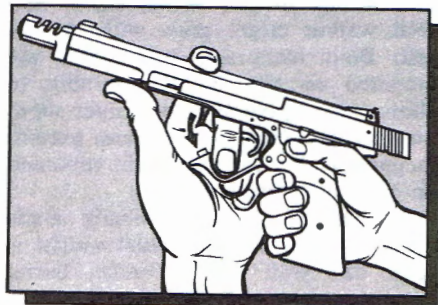
The Model 41 was initially made with 7 $\frac{3}{8}$ " barrel only. Total weight is 43 $\frac{1}{2}$  ozs. with muzzle brake, barrel





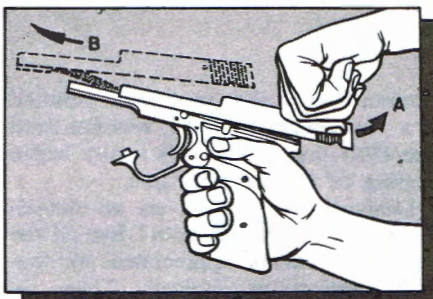
weight, and magazine in place. A set of 3 additional counterweights totaling 16½ ozs., for attachment to the barrel assembly, is available as an accessory item. In the fall of 1959 an interchangeable 5" barrel was offered and the Model 41 can now be ordered in either barrel length. Weight of the short-barrel Model 41 is 40 ozs. It is furnished without muzzle brake.

A lower-priced and somewhat simplified version of the Model 41 was introduced in late 1959. This is the Model 46, made without muzzle brake, cocking indicator, and integral trigger adjusting device, and with plain rather than 'high bright' blue finish. Also, the



**1** Pull slide (19) all the way back until it locks open. Press in magazine catch nut (49) and remove magazine. Pull trigger guard (63) down while holding finger over top of barrel assembly to prevent it falling off when trigger guard is down. Remove barrel assembly (1) from frame (59)

Model 46 does not have grooving on top of the barrel and on the front strap, or checkering on the head of the magazine release. Standard grips are of Nylon plastic rather than walnut. A detachable 2-oz. counterweight for attachment under the barrel is furnished as an extra. The Model 46 is grooved under the muzzle for attachment of the counterweights made for the Model 41. Disassembly and assembly procedures for the Model 46 are essentially the same as for the Model 41.



**2** Pull slide (19) backward and raise rear of slide slightly. Slide may now be moved forward and off receiver and recoil spring (58) may be removed. This is sufficient disassembly for normal cleaning purposes. Removal of grip screws (72) and grips (71) will allow complete disassembly of parts inside frame. After reassembling slide (19) to frame (59), lock slide in its rearward position by holding back while pressing upwards on slide stop (56). Barrel is then easily added

### Parts Legend

1. Barrel assembly
2. Muzzle brake
3. Muzzle brake screw
4. Barrel weight
5. Rear sight
6. Rear sight elevating nut
7. Rear sight elevating nut plunger spring
8. Rear sight elevating nut plunger
9. Rear sight windage screw plunger spring
10. Rear sight windage screw plunger
11. Rear sight windage screw
12. Rear sight slide
13. Rear sight windage nut
14. Rear sight elevating spring
15. Rear sight spring clip
16. Rear sight elevating stud
17. Rear sight pivot pin
18. Rear sight pivot clip
19. Slide
20. Extractor plunger
21. Extractor spring
22. Extractor
23. Bolt
24. Bolt pin
25. Firing pin spring
26. Firing pin
27. Trigger bar
28. Trigger bar spring
29. Magazine catch
30. Magazine disconnect assembly
31. Magazine disconnect spring
32. Indicator
33. Indicator spring
34. Hammer
35. Stirrup pin
36. Stirrup
37. Mainspring
38. Mainspring retainer
39. Mainspring retainer pin
40. Sear pin

41. Sear spring
42. Sear
43. Manual safety assembly
44. Pawl cam plunger
45. Pawl cam spring
46. Pawl cam
47. Manual safety spring plate
48. Manual safety spring plate screw
49. Magazine catch nut
50. Magazine catch plunger
51. Magazine catch spring
52. Pawl pin
53. Pawl & trigger spring
54. Pawl
55. Trigger pull adjusting lever
56. Slide stop & ejector assembly with slide stop spring
57. Recoil spring guide
58. Recoil spring
59. Frame
60. Trigger
61. Trigger pin
62. Trigger stop screw
63. Trigger guard
64. Trigger guard pin
65. Magazine follower
66. Magazine pin
67. Magazine tube
68. Magazine spring
69. Magazine spring plunger
70. Magazine buttplate
71. Grips (2)
72. Grip screws (2)
- Removable barrel counterweights
  - A. Counterweight upper section, steel or aluminum
  - B. Counterweight middle section
  - C. Counterweight nut
  - D. Counterweight lower section
  - E. Counterweight screws

## A MAN TO REMEMBER

### HORACE SMITH



*Founded an  
important firm*

Born—Cheshire, Mass.,  
Oct. 28, 1808

Died—Springfield, Mass.,  
Jan. 15, 1893

**H**ORACE SMITH was associated with the manufacture of firearms almost from his birth. His father, who was a carpenter by trade, worked at the Springfield Armory. When young Horace completed his public school education at the age of 16, he too obtained employment there as a gunsmith's apprentice, and he continued to work in the Armory for the next 18 years. After leaving Springfield he worked briefly in a number of other gun factories, including those of Charles Thurber, Eli Whitney, Allen & Thurber, Oliver Allen, and Allen, Brown & Luther.

About 1850 Smith began his experimental and developmental work. He obtained his first patent in 1851 for a breech-loading rifle. In 1853 he entered into partnership with Daniel Wesson, a fellow gunsmith, for the manufacture of a repeating firearm they had perfected between them and which they patented in 1854. In 1855, however, they sold out to the Volcanic Arms Co. and Smith retired to Springfield to operate a livery stable with his brother-in-law.

Wesson, however, kept busy building a revolver to fire a metallic cartridge he and Smith had developed, and in 1857 they resumed their partnership to manufacture the Smith & Wesson revolver, although they had not yet received their basic patents. The new enterprise prospered as the partners continually worked to improve their product. Finally, in 1873, Smith, who had been executive head of the firm, sold his interests in the business to Wesson and retired to Springfield, where he became an alderman and a director of a number of industrial and commercial enterprises.—HAROLD L. PETERSON.





# SMITH & WESSON MODEL 52 PISTOL

By JAMES M. TRIGGS

**D**ESIGNED expressly for target shooting, the Smith & Wesson Model 52 semi-automatic pistol was introduced in 1962. It is chambered for the .38 S&W Special cartridge loaded with flush-seated wadcutter bullet. The magazine will not accept cartridges longer than 1.19", and capacity of the magazine is 5 rounds only.

The Model 52 is of locked-breech

type and its basic design stems from the Model 39 double-action pistol introduced by the same maker in 1954. The lock mechanism of the Model 52 can be adjusted for double-action use by tightening the double-action lockout screw. However, this increases initial trigger slack which many shooters consider objectionable. This pistol will not fire with magazine removed. A feature

of interest to the target shooter is that this pistol may be dry-shot with impunity as the engagement of the safety interposes a solid block between hammer and firing pin.

The rear sight is of modern design with click adjustments for both windage and elevation. Each click moves point of impact approximately  $\frac{3}{4}$ " in elevation and  $\frac{1}{2}$ " in windage at 50 yds.

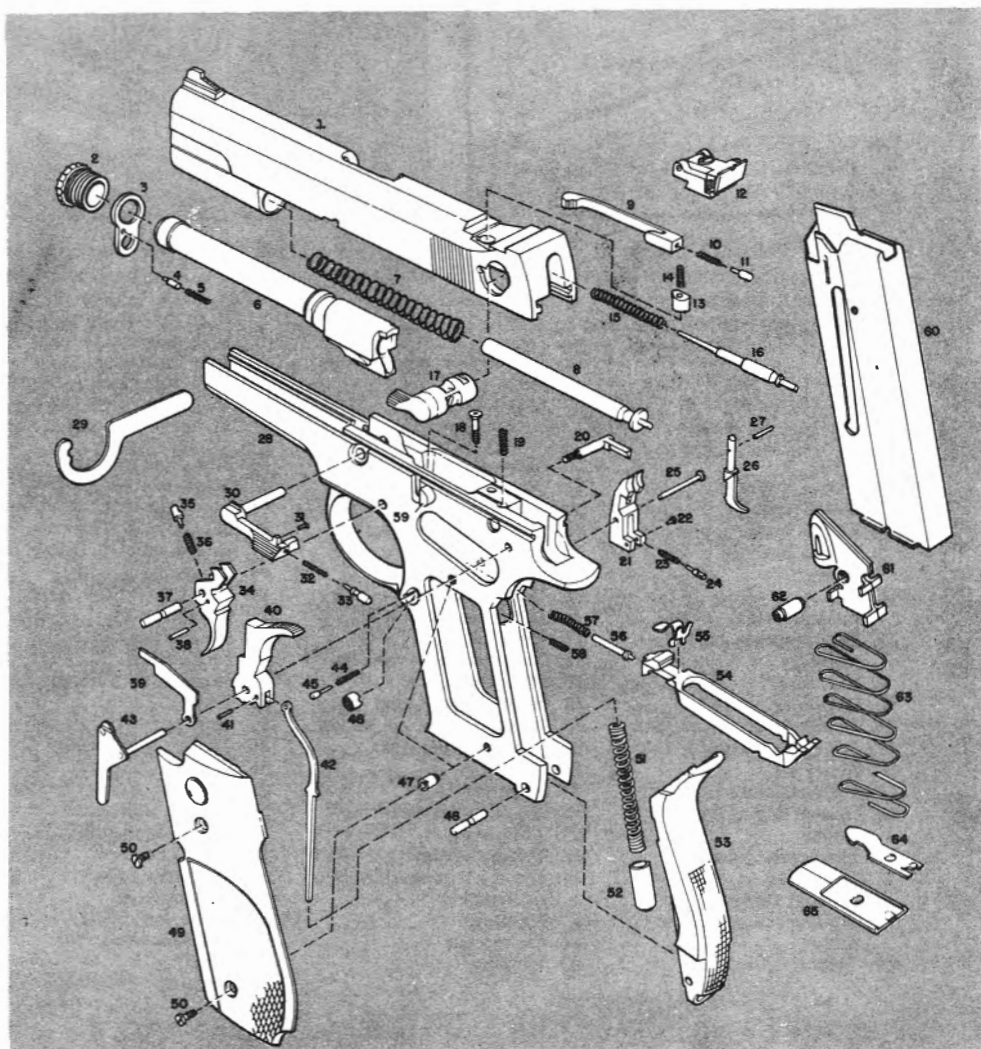
## Disassembly Procedure

Press in magazine catch nut (46) on left side of frame (28) and withdraw magazine (60) from butt. Check chamber to be sure pistol is unloaded. Place manual safety (17) in fire or upper position.

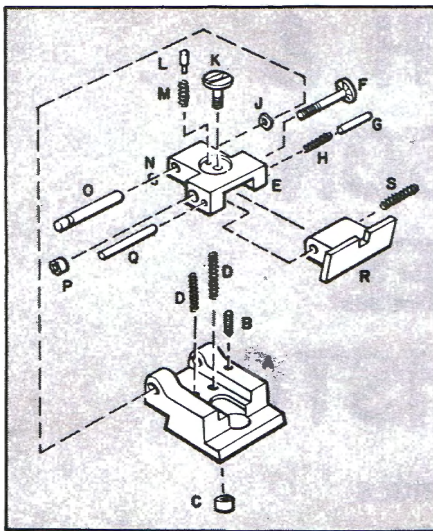
While pressing to left on right end of slide stop (30), pull slide (1) rearward until recess on lower left side of slide is lined up with forward end of slide stop. Pull slide stop out of frame to left and draw slide forward off frame.

Invert slide and, while compressing recoil spring (7) with fingers, lift out recoil spring guide assembly (8). Place barrel bushing wrench (29) over notches on barrel bushing (2), depressing barrel bushing plunger (4). Turn bushing counterclockwise, removing it from slide. Lift rear end of barrel (6) and withdraw barrel from slide to rear.

To reassemble, replace barrel in slide. Replace barrel bushing and plate, turning bushing to a firm fit aligning closest notch to plunger. When replacing recoil spring guide assembly and spring, be sure that guide bushing part of guide assembly (8) is engaged in small radius cut in barrel lug and properly centered. Replace slide in frame, depressing ejector (39) so slide will travel over it to rear. Align slide stop cut in slide with slide stop hole in frame and insert slide stop from left side of frame. Return slide to forward position and replace magazine, completing the reassembly procedure.



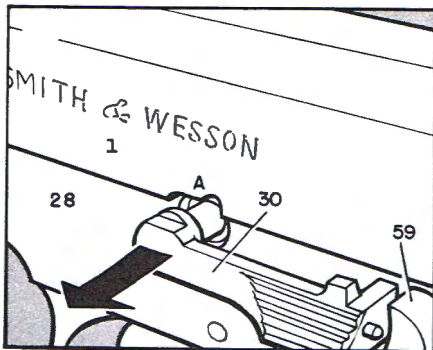




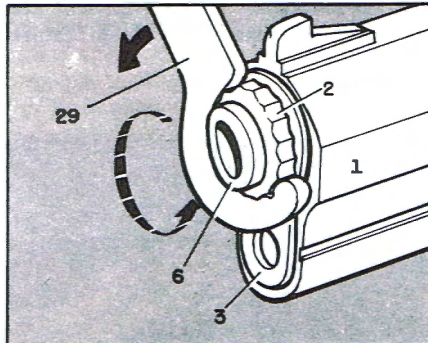
### Rear Sight Assembly Parts Legend

- A. Base
- B. Lock screw
- C. Elevation nut
- D. Elevation springs
- E. Body
- F. Windage screw
- G. Windage plunger
- H. Windage plunger spring
- J. Wavy washer
- K. Elevation screw
- L. Elevation plunger
- M. Elevation plunger spring
- N. Spring clip
- O. Pivot pin
- P. Windage nut
- Q. Traverse pin
- R. Slide
- S. Windage spring

**1** To elevate rear sight, turn top elevating screw (K) to left (counterclockwise). To depress, turn screw (K) to right (clockwise). To move sight to right, turn windage screw (F) to right (clockwise). To move sight to left, turn windage screw (F) to left (counterclockwise)



**2** Hold slide (1) rearward in position shown with recess in slide aligned with forward end of slide stop (30) as shown at A. Press right end of slide stop into frame and withdraw slide stop from the left side



**3** Place wrench (29) over notches on barrel bushing (2), compressing barrel bushing plunger (4) with wrench simultaneously. Turn bushing to left to unscrew from the slide

### Parts Legend

- |                                       |                                  |  |
|---------------------------------------|----------------------------------|--|
| 1. Slide                              | 20. Magazine catch               | 43. Side plate assembly                  |
| 2. Barrel bushing                     | 21. Sear                         | 44. Magazine catch spring                |
| 3. Barrel bushing plate               | 22. Sear plunger pin             | 45. Magazine catch plunger               |
| 4. Barrel bushing plunger             | 23. Sear plunger spring          | 46. Magazine catch nut                   |
| 5. Barrel bushing plunger spring      | 24. Sear plunger                 | 47. Frame stud (4)                       |
| 6. Barrel                             | 25. Sear pin                     | 48. Insert pin                           |
| 7. Recoil spring                      | 26. Disconnecter                 | 49. Stock, left (Right stock not shown.) |
| 8. Recoil spring guide assembly       | 27. Disconnecter pin             | 50. Stock screws (4)                     |
| 9. Extractor                          | 28. Frame                        | 51. Mainspring                           |
| 10. Extractor spring                  | 29. Barrel bushing wrench        | 52. Mainspring plunger                   |
| 11. Extractor spring plunger          | 30. Slide stop                   | 53. Insert                               |
| 12. Rear sight assembly (see Fig. 1.) | 31. Slide stop plunger pin       | 54. Drawbar                              |
| 13. Ejector-depressor plunger         | 32. Slide stop plunger spring    | 55. Trigger play spring                  |
| 14. Ejector-depressor plunger spring  | 33. Slide stop plunger           | 56. Drawbar plunger                      |
| 15. Firing pin spring                 | 34. Trigger                      | 57. Drawbar plunger spring               |
| 16. Firing pin                        | 35. Trigger plunger              | 58. Trigger stop screw                   |
| 17. Manual safety                     | 36. Trigger plunger spring       | 59. Slide stop button                    |
| 18. Double action lockout screw       | 37. Trigger pin                  | 60. Magazine tube                        |
| 19. Ejector spring                    | 38. Trigger plunger pin          | 61. Magazine follower                    |
|                                       | 39. Ejector & magazine depressor | 62. Magazine pin                         |
|                                       | 40. Hammer                       | 63. Magazine spring                      |
|                                       | 41. Stirrup pin                  | 64. Magazine buttplate catch             |
|                                       | 42. Stirrup                      | 65. Magazine buttplate                   |

Extractor may be removed by lifting it forward to clear hook and pressing to rear.

To reassemble slide assembly, place extractor in its recess, with extractor hook forward. Press extractor down sufficiently to straighten slight bend and press forward to engage lug in slide cut. Replace manual safety plunger and spring in rear of extractor. Insert firing pin and spring from rear of slide and press rear of firing pin into slide as far as possible and hold from front with pliers as described above. Insert manual safety in left of frame, pressing in until right end of manual safety contacts manual safety plunger (10). Release grip on pliers holding firing pin. Depress manual safety plunger and spring and depress manual safety to the right and into position.

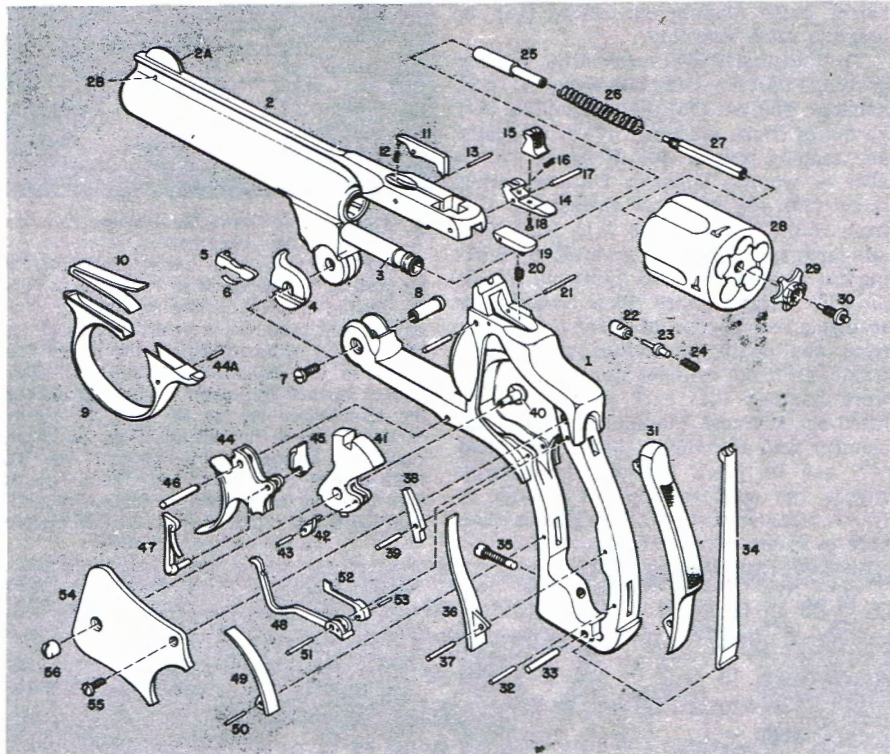
To disassemble frame assembly, remove stocks (58) by removing the four stock screws (59). Drive out insert pin (55) and remove insert (54) and mainspring. Lift out sideplate assembly (31). Lift out hammer (26) and stirrup (28). Remove ejector (29) and ejector spring (30) and sear release lever (25). Push sear pin (42) out from right side of frame, allowing sear (41) to drop out. Drive trigger pin (32) out from left side, allowing drawbar (50) to slide back toward rear of frame. Let disconnecter (46) drop out and pull drawbar out from rear. Tip frame to vertical position butt down, allowing drawbar plunger (49) and spring (48) to drop out. Push trigger (33) upward and forward out of frame. Place frame on right side so magazine catch body is supported. Using a drift pin or small punch, press down on magazine catch plunger (37) and hold. Turn magazine catch nut (39) counterclockwise and remove.

To reassemble frame assembly, insert magazine catch body in frame. Support frame on solid surface and replace magazine catch spring and plunger. Depress plunger and assemble magazine catch nut. Turn until shank of magazine catch body is slightly below surface of nut. Release plunger and let it snap into notch. Insert trigger downward through top of frame. Insert drawbar plunger and spring into hole in frame forward of trigger. Insert drawbar through rear of frame, engaging drawbar plunger. Hold drawbar in position, and with frame bottom side up, insert disconnecter. Grasp trigger and work drawbar all the way forward so that rear of drawbar is *under* foot of disconnecter. Insert trigger pin. Insert sear and sear pin, taking care that headed end of sear pin is at left side of frame. Hold trigger back and insert stirrup and hammer. Release trigger. Insert ejector spring in hole at top of frame and ejector in place. Insert side plate stud in hole in left side of frame through ejector and partially through hammer. Insert sear release lever at right of hammer and press sideplate stud the rest of the way through hammer, sear release lever, and right side of frame. Place top of insert in frame and swing base into place with stirrup in mainspring and mainspring seated in plunger (53). Drive in insert pin and replace stocks and stock screws. —



# S&W New Departure Safety Hammerless Revolver

By James M. Triggs



## Parts Legend

- |                                   |                              |
|-----------------------------------|------------------------------|
| 1. Frame                          | 29. Extractor                |
| 2. Barrel                         | 30. Extractor stud           |
| 2a. Front sight                   | 31. Safety lever             |
| 2b. Front sight pin               | 32. Safety lever pin         |
| 3. Base pin                       | 33. Stock pin                |
| 4. Extractor cam                  | 34. Mainspring               |
| 5. Extractor cam latch            | 35. Strain screw             |
| 6. Extractor cam latch spring     | 36. Latch spring             |
| 7. Joint pivot screw              | 37. Latch spring pin         |
| 8. Joint pivot                    | 38. Latch                    |
| 9. Trigger guard                  | 39. Latch pin                |
| 10. Trigger spring                | 40. Hammer stud              |
| 11. Cylinder catch                | 41. Hammer                   |
| 12. Cylinder catch spring         | 42. Stirrup                  |
| 13. Cylinder catch pin            | 43. Stirrup pin              |
| 14. Barrel catch                  | 44. Trigger                  |
| 15. Barrel catch thumbpiece       | 44a. Trigger stop pin        |
| 16. Barrel catch spring           | 45. Sear                     |
| 17. Barrel catch pin              | 46. Trigger pin              |
| 18. Barrel catch thumbpiece screw | 47. Hand & hand spring       |
| 19. Barrel catch plate            | 48. Cylinder stop            |
| 20. Barrel catch plate spring     | 49. Cylinder stop spring     |
| 21. Barrel catch plate pin        | 50. Cylinder stop spring pin |
| 22. Firing pin bushing            | 51. Cylinder stop pin        |
| 23. Firing pin                    | 52. Split spring             |
| 24. Firing pin spring             | 53. Split spring pin         |
| 25. Extractor post                | 54. Side-plate               |
| 26. Extractor spring              | 55. Side-plate screw         |
| 27. Extractor rod                 | 56. Hammer stud nut          |
| 28. Cylinder                      |                              |

IN 1887, Smith & Wesson, Springfield, Mass., introduced their 5-shot Safety Hammerless top-break revolver. It was initially offered only in cal. .38 S&W with choice of blue or nickel finish and barrel lengths of 3¼", 4", and 5".

The editorial announcement of this new arm, in the April 1887 issue of *The Rifle*, predecessor of *THE RIFLEMAN*, stated that the new S&W Safety Hammerless represented a 'new departure' in revolver design. Apparently this phrase appealed to Smith & Wesson as it was subsequently used in designating this model in factory literature.

The Safety Hammerless revolver in cal. .32 was introduced in February 1888 and was also available in blue or nickel finish with barrel lengths of 3" and 3½". The frame and other parts were made to smaller scale than the cal. .38 revolver. Subsequently this model was also offered with 2" barrel.

Smith & Wesson advertisements in 1887 issues of *The Rifle* mentioned proposed production of the Safety Hammerless in cal. .44, but this model was never commercially available.

The mechanical features of the Safety Hammerless revolver were not particularly unique even in 1887. It was not the first hammerless self-cocking revolver, nor was it the first top-break or hinged-frame type. In retrospect, the only unique feature was the grip safety which prevented cocking and firing of the gun until the safety lever had been depressed. The trigger pull was extremely heavy but S&W capitalized on this by claiming that this made the gun safe around small children lacking the strength to fire the gun. It was also claimed that guns of this design were less liable to accidental discharge. However, the only apparent real advantage was the absence of an exterior hammer liable to snag in the pocket when the gun was withdrawn hurriedly.

## Interesting lock feature

An interesting feature of the lock mechanism provided a definite hesitation or stopping point just prior to sear disengagement. Then, slight additional pressure on the trigger discharged the revolver without dislodging the sights from point of aim. It was thus possible to shoot slow-fire reasonably accurately.

In late 1888 or early 1889 the Ordnance Dept. purchased one cal. .38 Safety Hammerless revolver. Also purchased at the same time was one cal. .38 Colt New Navy Pattern double-action revolver. The sample guns were turned over to an Ordnance Board for test and evaluation. After subjecting the 2 guns to strenuous tests the board recommended purchase and field test of limited quantities of both guns to determine which was the more serviceable



for military purposes. One hundred each of the S&W and Colt revolvers were purchased and 96 of each were issued to troops for a 14-month trial period. Upon completion of the trials these guns were turned over to an Ordnance Board convened Jan. 16, 1892. The Board's findings were in favor of the Colt revolver, which in modified form was subsequently adopted. The Safety Hammerless revolver was rejected largely because its mechanism was considered delicate. It also proved difficult to open when rusty or dusty. It had 10 more parts than the Colt and was more difficult to disassemble and assemble.

Despite its failure of adoption as a military weapon, the Safety Hammerless enjoyed considerable popularity as a commercial arm. Two models of the cal. .32 revolver were made. The first model was manufactured from February 1888 until September 1900 with serial numbers running from 1 to 91,417. Production of the second model started in September 1900 with gun 91,418 and ended with gun 242,880 in October 1922.

Five models of the cal. .38 Safety Hammerless were produced according to the following schedule:

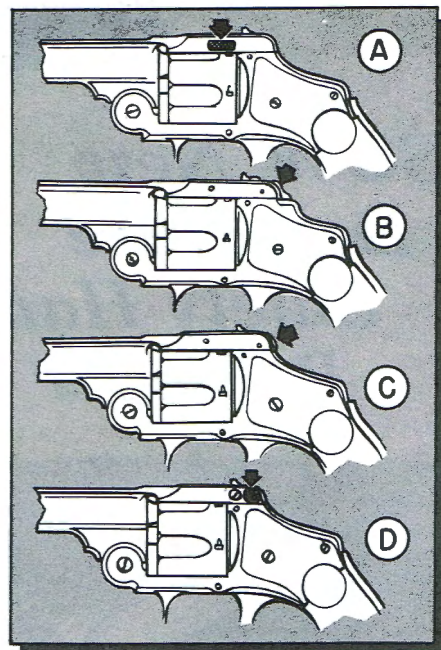
1st Model	1- 5000	Jan. 1887-July 1888
2nd Model	5,001- 42,483	July 1888-Aug. 1890
3rd Model	42,484-116,002	Aug. 1890-Dec. 1898
4th Model	116,003-190,064	Dec. 1898-Apr. 1907
5th Model	190,065-261,493	Apr. 1907-June 1940

Production span of the Safety Hammerless revolver was 53 years.

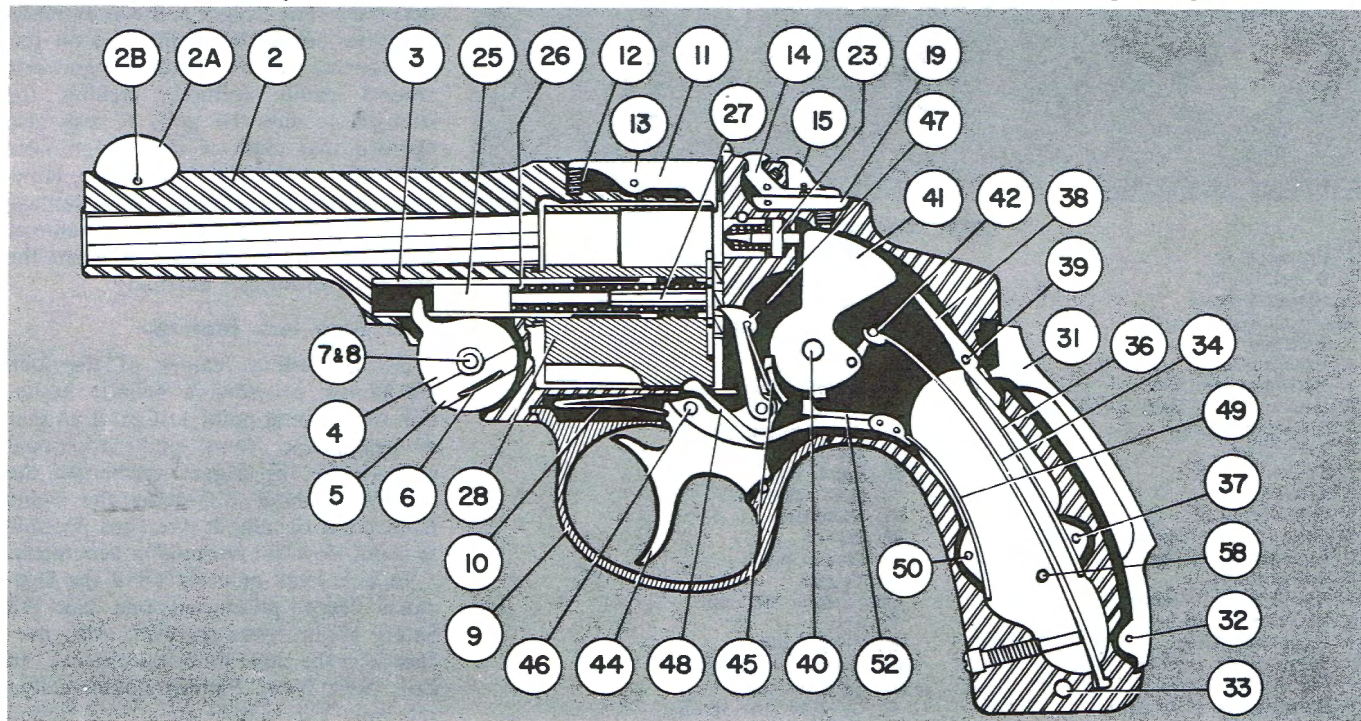
#### DISASSEMBLY PROCEDURE

To dismount barrel from frame, break action and remove joint pivot screw (7). Punch out joint pivot (8) to right. Pull barrel (2) free of frame (1). Extractor cam (4) and extractor cam latch (5) can now be slipped free of joint. Remove cylinder (28) complete by pressing cylinder catch (11) on top strap of barrel and unscrewing cylinder and extractor assembly from base pin (3). (Note: Not all S&W Safety Hammerless revolvers have this cylinder catch and cylinder removed in the same manner.) Removal of base pin (3) from barrel is not recommended. Cylinder catch assembly (11) and barrel catch assembly (14-20) are easily removed by drifting out the respective pins (13, 17, 21). Remove barrel catch thumbpiece screw (18) to separate catch assembly.

To disassemble lock mechanism, remove grips and unscrew side-plate screw (55) and hammer stud nut (56). Ease side-plate (54) up out of frame gradually by prying gently and tapping reverse side of frame with a fiber or wooden hammer. Unscrew strain screw (35) and withdraw mainspring (34) from frame. Safety lever (31), latch (38) and latch spring (36) are removed by drifting out pins (32, 37, 39). Drift out trigger pin (46). Trigger guard (9) is removed by springing rear portion of guard toward the front and pulling downward and out of frame. Drift out cylinder stop pin (51) and work hammer (41) back until it can be lifted out of frame. Manipulate trigger and cylinder stop assembly in frame until hand (47) can be lifted out of frame. Drop trigger and cylinder stop out bottom of frame. Remove sear (45) through side-plate hole in frame. Reassemble in reverse.



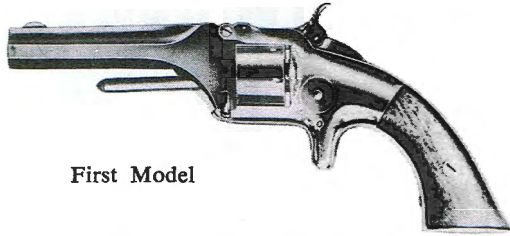
1 This drawing shows the 4 major variations of the Safety Hammerless revolver: A—First Model with Z-bar barrel catch operated by pushing bar in top strap from left to right. B—Second Model, opened by pushing down on checked thumbpiece protruding from rear of top strap of barrel (this is the model illustrated in the exploded drawings). C—Third Model, opened by pushing down on checked flat thumbpiece on top of strap. D—Fourth Model, opened by lifting T-shaped barrel catch with knurled buttons on each side. The Fifth Model is identical with the fourth except that the front sight is forged integrally with the barrel rather than a separate piece as on the preceding models



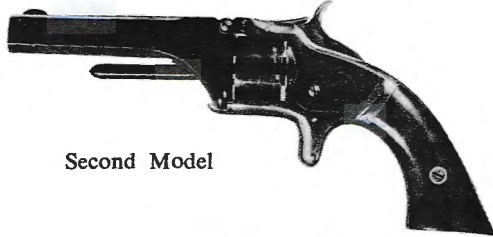
2 This detailed longitudinal-section of the revolver reveals the working mechanism with all parts in proper relationship. The revolver is shown with the lock mechanism in fired position. Note that the safety lever (31) is out, allowing the top end of the latch (38) to stand out in the way of the hammer (41), preventing the hammer from coming back far enough to fire. When the safety lever is pressed in, the top of the latch moves back against the inner wall of the frame, leaving the hammer clear to come all the way back to fire



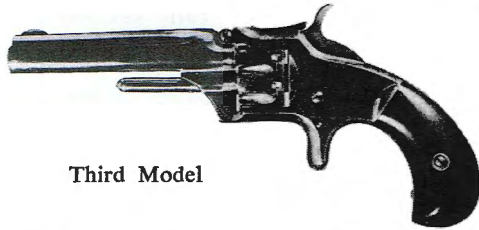
# Smith & Wesson Number 1 Revolver By James M. Triggs



First Model



Second Model



Third Model

IN 1857 Smith & Wesson of Springfield, Mass., introduced the first American metallic cartridge revolver which was also the first with cartridge chambers bored through the cylinder from end to end under the Rollin White patent of Apr. 3, 1855, No. 12,648. This 7-shot revolver, designated Number 1, was chambered for a unique Smith & Wesson designed cal. .22 rim-fire cartridge still manufactured today as the .22 short. The early round was primed with fulminate of mercury and featured a 3-gr. powder charge behind a 30-gr. lead bullet. While ballistically poor, this cartridge and revolver combination proved immediately popular. Eventually certain improvements were effected and in 1860 the Second Model of the Number 1 revolver was introduced. In 1868 the Third Model of the Number 1 revolver supplanted the Second Model. It too proved popular until production was discontinued in 1879.

JAMES M. TRIGGS, a gun collector of Mamaroneck, N. Y., is a writer-illustrator.

All told there were 254,958 Number 1 revolvers manufactured, with the Third Model accounting for 128,528 of this total.

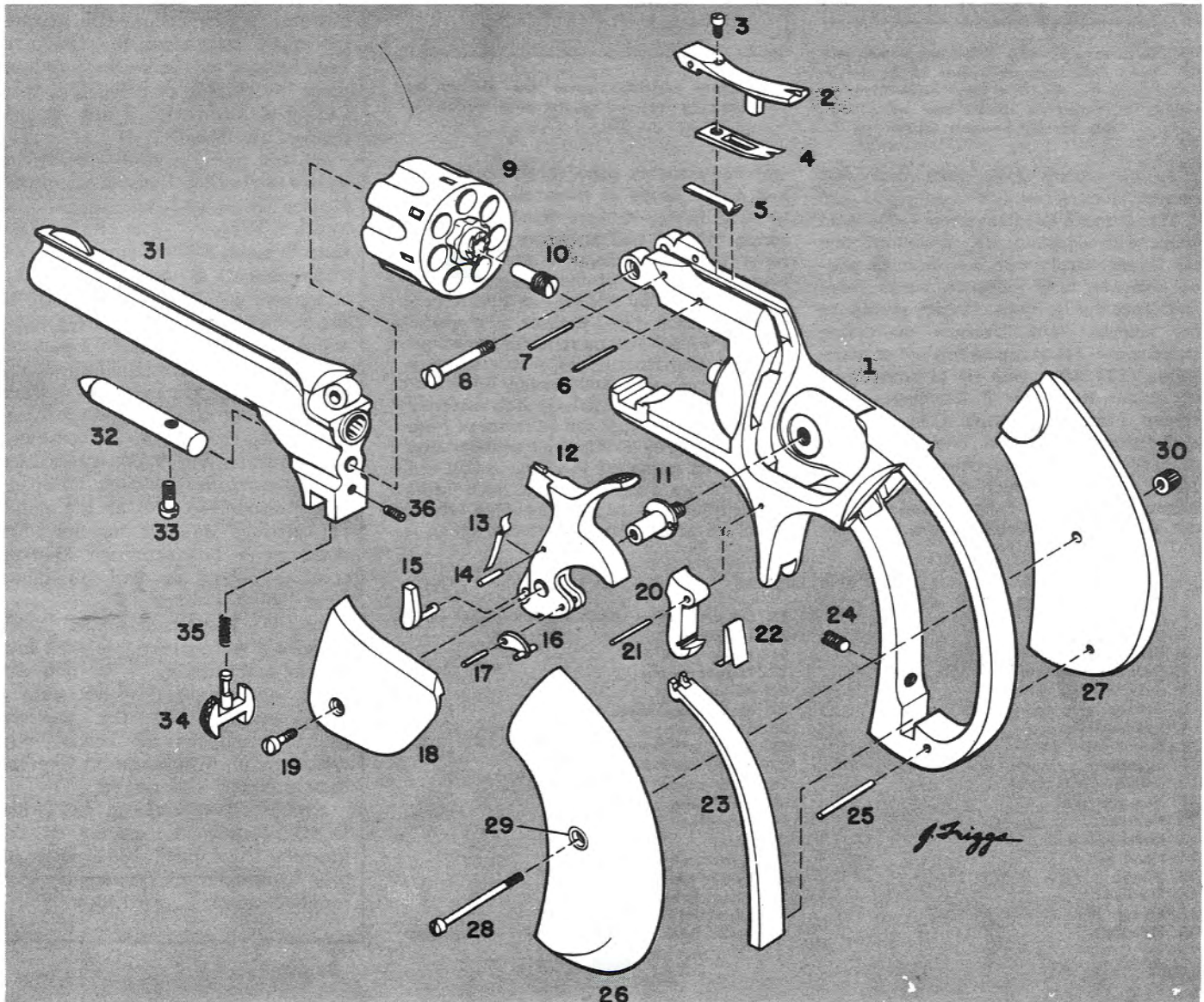
A note of caution regarding these old S&W 'tip-up' revolvers: while the length of the cylinder is too short to permit use of modern .22 long or long rifle cartridges, the .22 short will usually chamber satisfactorily. However, these revolvers were manufactured many years before the advent of smokeless powder and it would be unwise to fire them with modern smokeless powder ammunition.

## Disassembly Procedure

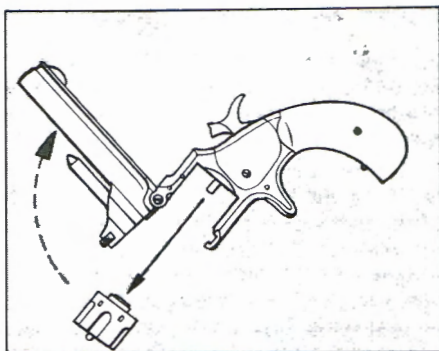
While there are several minor variations in No. 1 S&W revolvers, disassembly procedure for all is substantially the same.

To tip up barrel, raise latch (34) and swing barrel (31) upward. Cylinder (9) is removed by drawing it straight forward.

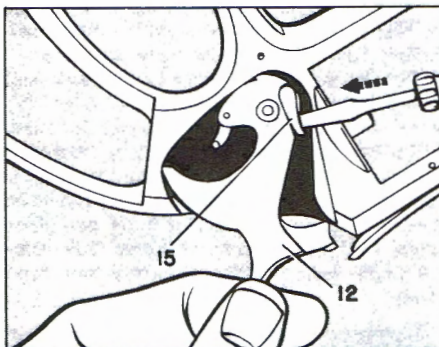
To remove barrel from frame, unscrew barrel pivot screw (8). Ejector pin (32) is removed by unscrewing its screw (33). Remove barrel latch screw (36) and drop latch (34) out bottom of barrel lug. Barrel latch spring (35) will drop out after latch.





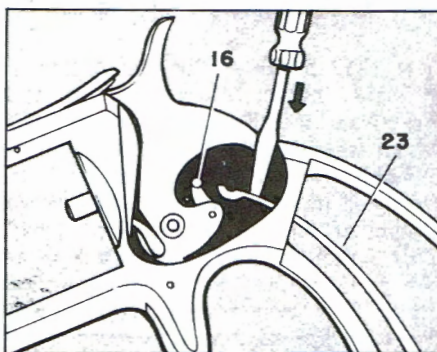


**1** Pressing upward on barrel latch (34) releases barrel which tips upward as shown. Cylinder can be withdrawn from frame toward the front

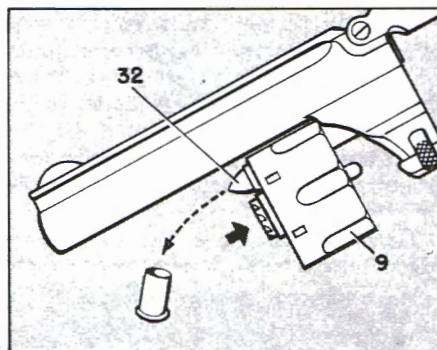


**3** To remove hammer (12) from frame, hold hand (15) back and clear of its slot in frame with the tip of a small screwdriver or similar implement as shown and work hammer up off hammer stud

To disassemble lock mechanism, first remove stock screw (28) and stocks (26 & 27). Remove sideplate screw (19). Hold frame with sideplate (18) downward and tap frame sharply with a wooden or plastic hammer until sideplate works loose and drops out of frame. Do not attempt to pry sideplate out. Unscrew mainspring strain screw (24) and press top end of mainspring (23) down with tip of screwdriver or similar tool until it disengages from stirrup (16). Mainspring (23) may be easily lifted out of frame. While holding tip of hand (15) back and clear of its slot in frame with tip of small screwdriver, work hammer (12) up off hammer stud (11) and out of frame (1) with fingers. Hammer



**2** After loosening mainspring strain screw (24), mainspring (23) may be removed by pressing down on top end of spring at point shown to disengage stirrup (16) and lifting from frame with the fingers



**4** Empty cartridge cases are ejected by pressing reversed cylinder onto ejector pin (32)

will frequently fit quite snugly to its stud and a few drops of penetrating oil may help in lifting it free. Hand and hand spring (13) as well as stirrup rarely need be removed from hammer except for replacement. Either of these parts may be easily removed by drifting out their respective pins (14 & 17). Inasmuch as a special spanner wrench will be required to remove hammer stud from frame, such removal is not recommended and should seldom if ever be necessary. Cylinder stop assembly and spring (2, 3, 4, 5) can be removed from top of frame by drifting out cylinder stop pin (7) and spring pin (6). Trigger (20) and spring (22) are easily removed from frame by drifting out trigger pin (21). Reassembly is accomplished in reverse order.

#### Parts Legend

- |                             |   |
|-----------------------------|---|
| 1. Frame                    | 19. Sideplate screw (screws into hammer stud) |
| 2. Cylinder stop            | 20. Trigger                                   |
| 3. Cylinder stop screw      | 21. Trigger pin                               |
| 4. Cylinder stop striker    | 22. Trigger spring                            |
| 5. Cylinder stop spring     | 23. Mainspring                                |
| 6. Cylinder stop spring pin | 24. Mainspring strain screw                   |
| 7. Cylinder stop pin        | 25. Stock pin                                 |
| 8. Barrel pivot screw       | 26. Stock, left hand                          |
| 9. Cylinder                 | 27. Stock, right hand                         |
| 10. Cylinder stud           | 28. Stock screw                               |
| 11. Hammer stud             | 29. Escutcheon                                |
| 12. Hammer                  | 30. Escutcheon nut                            |
| 13. Hand spring             | 31. Barrel                                    |
| 14. Hand pin                | 32. Ejector pin                               |
| 15. Hand                    | 33. Ejector pin screw                         |
| 16. Stirrup                 | 34. Barrel latch                              |
| 17. Stirrup pin             | 35. Barrel latch spring                       |
| 18. Sideplate               | 36. Barrel latch screw                        |

## A MAN TO REMEMBER

**DANIEL B. WESSON**

*Associated with  
the cartridge  
revolver*



*Born—Worcester, Mass.,  
May 18, 1825*

*Died—Springfield, Mass.,  
Aug. 4, 1906*

**D**ANIEL WESSON, the fourth of 10 children, followed the lead of an older brother and early decided to be a gunsmith. Upon completion of his schooling at the age of 18, he became an apprentice to his brother and served as such until 1846. Thereafter he worked as a journeyman gunsmith for his brother and a manufacturer in Hartford until his brother died in 1850. Wesson took over the business in partnership with another gunsmith, but when the latter retired he gave up the business and entered the employ of Allen, Brown & Luther of Worcester, a firm specializing in gun barrels.

It was while working for Allen, Brown & Luther that Wesson met Horace Smith, and the association of Smith & Wesson began. In his spare time Wesson devoted himself to the improvement of the metallic cartridge and with the help of Smith to the development of a repeating pistol and rifle. The two formed a partnership in 1853 and manufactured the cartridge and guns until 1855, when they sold out to the Volcanic Arms Co. After the sale of the business, Smith retired, but Wesson remained as superintendent of the company and continued to work on the metallic cartridge and on the improvement of a bored-through cylinder revolver patent he had purchased from Rollin White.

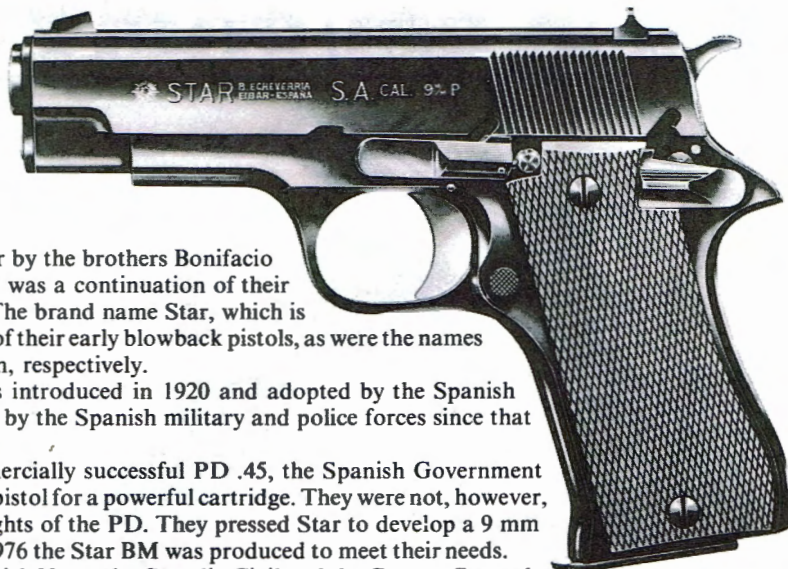
In 1857 Wesson persuaded Smith to form a new partnership with him for the manufacture of the new cartridge and revolver. Both were a huge success, and the partners brought out frequent models and variations in an attempt to improve their products still further.

Smith retired again in 1873, but Wesson remained, carrying on the business alone until 1883 when he took his sons into a partnership with him.—HAROLD L. PETERSON.



# Exploded views:

BY AGUSTIN GUIASOLA



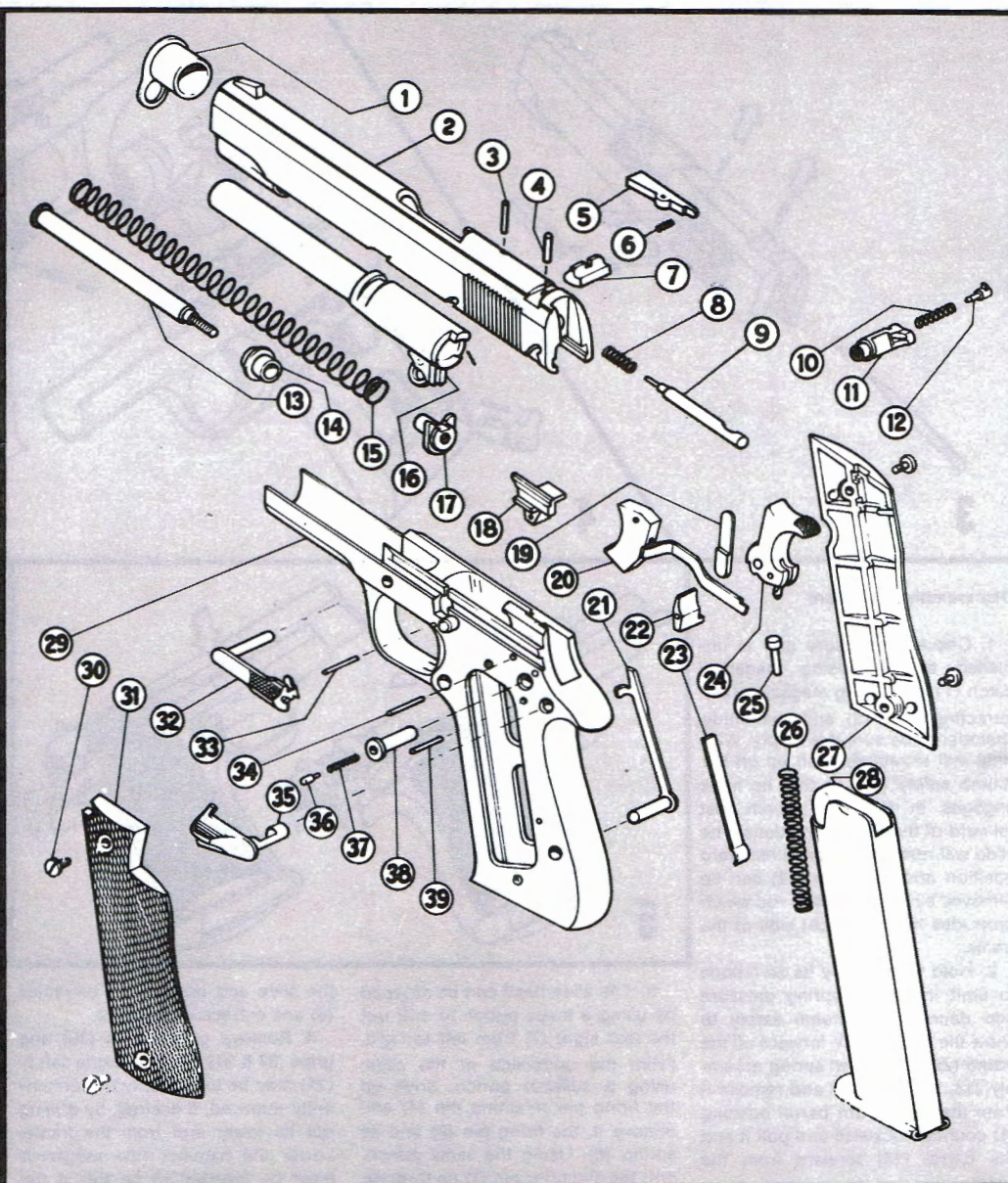
**B**ONIFACIO Echeverria, S.A., was founded in 1905 in Eibar by the brothers Bonifacio and Julian Echeverria Orbea. In actuality, the company was a continuation of their father's small gunmaking firm Txantoya of that same city. The brand name Star, which is now the commonly used term for the firm, was used on some of their early blowback pistols, as were the names Izarra and Estrella, which mean Star in Basque and Spanish, respectively.

Star's first locked breech pistol, the Modelo Militar, was introduced in 1920 and adopted by the Spanish Guardia Civil. Star pistols in various models have been used by the Spanish military and police forces since that time.

In the early 1970s, while Star was developing their commercially successful PD .45, the Spanish Government showed interest in the concept of the PD — an ultra-compact pistol for a powerful cartridge. They were not, however, interested in the .45 ACP cartridge or the fully adjustable sights of the PD. They pressed Star to develop a 9 mm handgun smaller than the already small Model BKS and in 1976 the Star BM was produced to meet their needs. The steel-framed BM is now the official handgun of the Spanish Navy, the Guardia Civil and the Cuerpo General de Policia. It and a variation with aluminum frame, the Model BKM, are distributed in the U.S. by Interarms of Alexandria, Va.

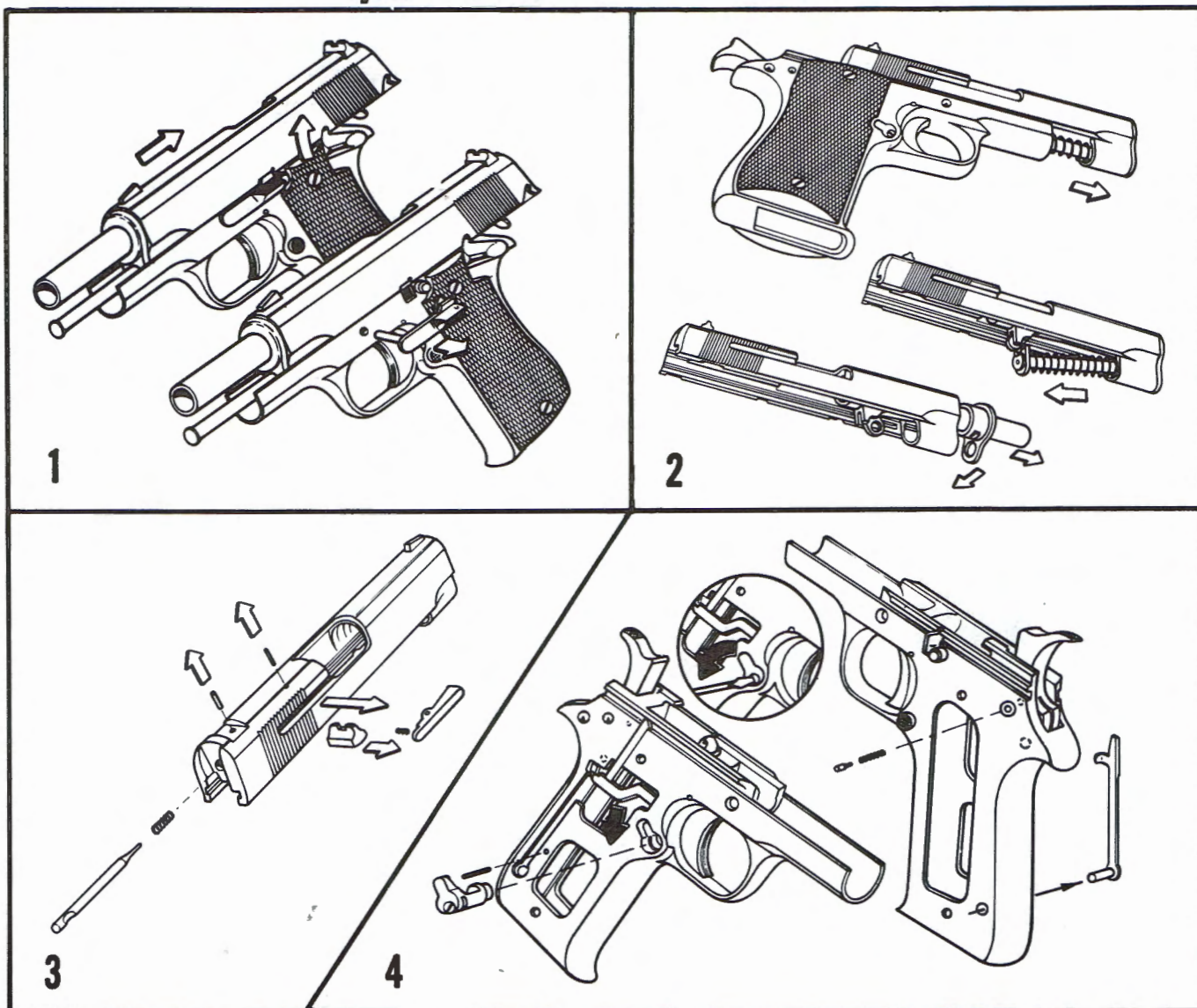
## Parts Legend

1. Barrel bushing
2. Slide
3. Extractor pin
4. Firing pin retaining pin
5. Extractor
6. Extractor spring
7. Rear sight
8. Firing pin spring
9. Firing pin
10. Magazine catch lock spring
11. Magazine catch
12. Magazine catch lock
13. Recoil spring guide
14. Recoil spring guide washer
15. Recoil spring
16. Barrel w/link and pin
17. Recoil spring guide head
18. Ejector
19. Interruptor
20. Trigger, assembly
21. Magazine safety
22. Sear
23. Sear spring
24. Hammer w/strut and pin
25. Hammer spring plunger
26. Hammer spring
27. Grip, right
28. Magazine, complete
29. Frame
30. Grip screws
31. Grip, left
32. Slide stop, assembly
33. Trigger pin
34. Ejector pin
35. Safety, thumb
36. Safety plunger
37. Safety plunger spring
38. Hammer pin
39. Sear pin





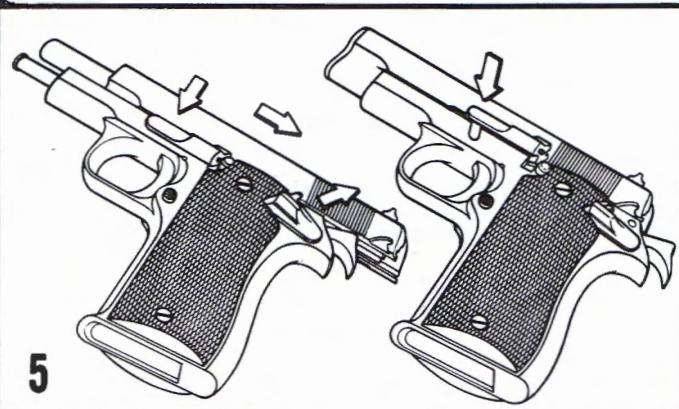
# STAR BM/BKM PISTOLS



## Disassembly Procedure

1. Check to be sure gun is unloaded by depressing magazine catch (11), removing magazine (28), retracting slide (2) and examining chamber to be sure it is empty. With slide still retracted, push up on the thumb safety (35) so that its hook engages in the slide notch just forward of the finger serrations. The slide will now remain in its rearward position and the slide (32) can be removed by pushing on its rod which protrudes from the right side of the frame.

2. Hold the slide by its serrations to limit the recoil spring pressure and depress the thumb safety to allow the slide to ride forward off the frame (29). Lift recoil spring assembly (13, 14, 15 & 17) and remove it from the slide. Turn barrel bushing (1) counterclockwise and pull it and the barrel (16) forward from the slide.



3. The slide itself can be stripped by using a brass punch to drift out the rear sight (7) from left to right. From the underside of the slide, using a suitable punch, drive up the firing pin retaining pin (4) and remove it, the firing pin (9) and its spring (8). Using the same punch, drift the extractor pin (3) up through

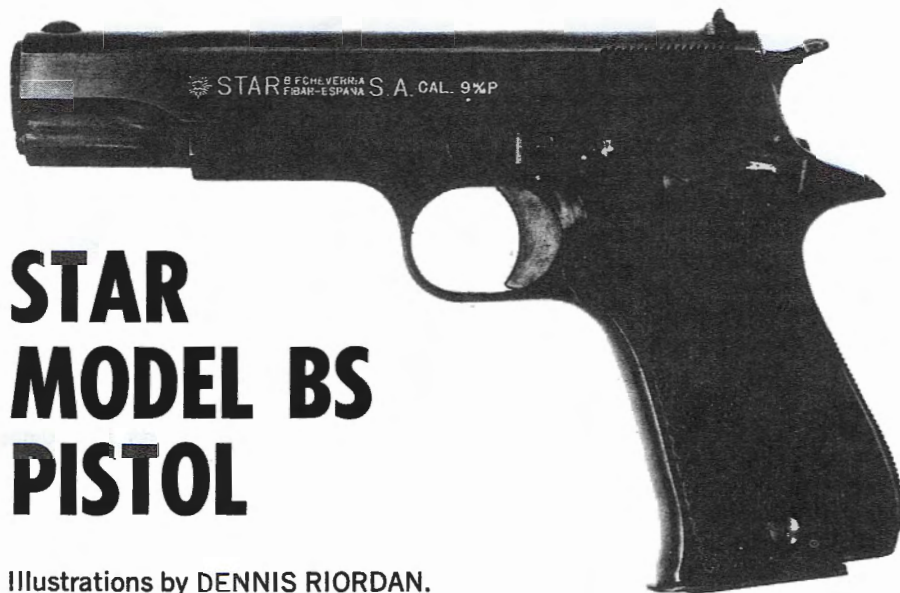
the slide and remove the extractor (5) and extractor spring (6).

4. Remove grip screws (30) and grips (27 & 31). The magazine safety (21) may be temporarily or permanently removed, if desired, by driving out its lower arm from the frame. Lower the hammer (the magazine must be inserted to do this if the

magazine safety is present) to simplify thumb safety removal. Rotate the thumb safety (35) to its vertical position and carefully "wiggle" it from the frame, being careful not to lose its plunger (36) and spring (37) which are small and under pressure. The magazine catch is taken out by depressing its knurled button and, with a small screwdriver, turning the magazine catch lock (12) counterclockwise out of its seat in the frame. The catch with its lock and spring may now be removed as an assembly (10, 11 and 12).

5. Reassembly is accomplished by reversing the above procedures, but before replacing the assembled slide on the frame, tilt the barrel link forward. After reinstalling the slide unit on the frame, align the barrel link hole with the slide stop hole in the frame before partially inserting the slide stop rod. Then lock the slide back with the thumb safety hook and fully seat the slide stop. ■





# STAR MODEL BS PISTOL

Illustrations by DENNIS RIORDAN.  
Text by LUDWIG OLSON

**W**HEN the Colt Model of 1911 cal. .45 semi-automatic pistol was introduced, it set a new standard in handgun excellence. This rugged reliable autoloader met with great success in foreign countries as well as the U.S., and its basic features were used in various other semi-automatic pistols, among them the Star Model BS.

Produced by Star Bonifacio Echeverria, S.A., of Eibar, Spain, the Star Model BS pistol is chambered for the 9 mm. Luger cartridge. This autoloader for military, law-enforcement, and defense use is similar to the Model 1911A1 version of the Colt in size and appearance, and has the Colt short-recoil system in which the rear of the barrel pivots downward for unlocking. The lockwork in the Star, however, differs considerably from that of the Colt.

An obvious difference between these pistols is that the Star lacks a grip safety. Another obvious difference is that the extractor of the Star is exposed on the right side of the slide, and the Colt extractor is almost entirely concealed. Also, the extractor of the Star is actuated by a coil spring, while the Colt extractor is made of springy steel so that no separate spring is required.

Many other differences in these pistols are internal and therefore not apparent except when the guns are disassembled. These differences are in the firing pin, disconnector, ejector, and trigger mechanism. Also, the Star lacks grip screw bushings, and its slide stop spring and plunger are in the slide stop.

The thumb safety of the Star is on the upper left side of the frame, and locks the hammer and slide when engaged. When this safety is disengaged, a red dot on the frame is exposed. Other

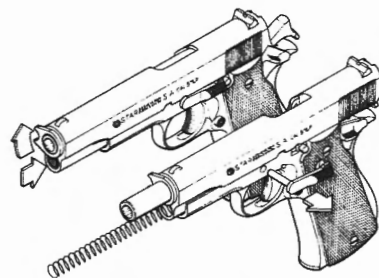
safety devices are a magazine safety to prevent the pistol from being fired when the magazine is removed, and the half-cock position of the hammer. The firing pin projects from the breech face when the hammer is down, and the only safe way to carry the pistol when the chamber is loaded is with the hammer cocked and thumb safety engaged.

As with the Colt, the magazine catch of the Star is on the left side of the frame. Magazine capacity is eight rounds. After the last shot is fired, the slide is locked open automatically by the slide stop.

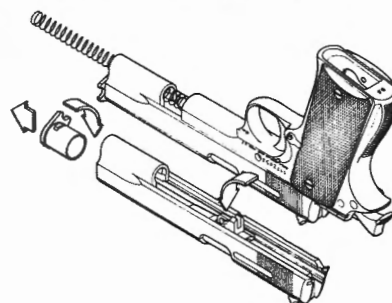
When a fully-loaded magazine is inserted in the pistol with the slide closed, a tab-like portion of the cartridge follower projects through a slot in the magazine base to indicate the fully-loaded condition. Another desirable feature of the magazine is that it can be disassembled easily for cleaning and lubrication.

All metal parts are steel with a high-luster blue finish on most exposed surfaces. The grips are checkered brown plastic. Since this well-made pistol is primarily for military and law-enforcement use, it is fitted with fixed sights. It has a large comfortable grip, good balance, generally favorable handling qualities, and performs well.

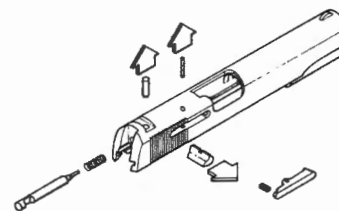
There is also a lightweight version of this pistol called the Model BKS Starlight. Featuring a lightweight-alloy frame, the Starlight weighs 25 ozs. as compared with 37½ ozs. for the Model BS. Barrel length of the Starlight is 4¼", while the Model BS has a 5" barrel. Other Star pistols closely related to the Model BS are the Model A in cal. .38 Super Automatic and the Model P in cal. .45 ACP. These are similar to the Model BS except for caliber. Star pistols are imported by Garcia Sporting Arms Corp., Washington, D.C.



**1** Depress magazine catch (11), and remove magazine (28). Draw slide (2) fully rearward to clear chamber and cock hammer (24). Release slide, and engage thumb safety (34). Depress knurled head of recoil spring plug (13), and rotate barrel bushing (1) clockwise (viewed from front) to its stop. Ease plug out of slide and remove. Release safety, and move slide rearward until rounded takedown notch on its left side aligns with lug on slide stop (31). Push inward on slide stop axle protruding from right side of frame (19), and withdraw slide stop to left.

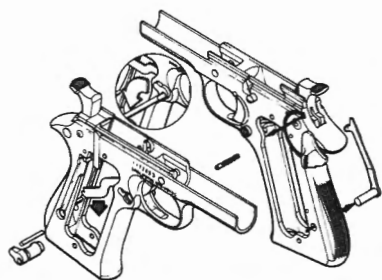


**2** Turn pistol upside down, and move slide forward off the frame. Lift recoil spring guide (14), and remove to rear along with the recoil spring (15). Turn barrel bushing counter-clockwise to its stop and remove. Lift barrel (16) to unlock from slide, rotate barrel link fully forward, and draw barrel forward out of slide. This completes field stripping for normal cleaning and lubrication.

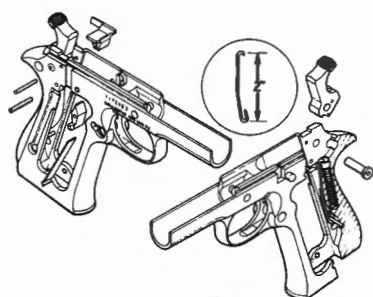


**3** For further disassembly, drift extractor pin (3) out through top of slide to release extractor (5) and extractor spring (6). Rear sight (7) must be driven out before firing pin (9) can be removed. Use a brass punch, and remove sight from left to right. Drive firing pin retaining pin (4) upward, and withdraw firing pin and firing pin spring (8).

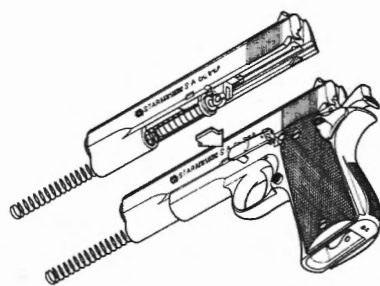




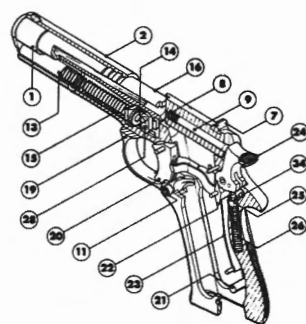
**4** Unscrew grip screws (29), and remove grips (27)(30). Detach magazine safety (21) by drifting out its integral pin. Pull trigger, and lower hammer with thumb. Turn thumb safety downward beyond fire position, and lift out safety plunger (35) and spring (36). Rotate safety upward beyond safe position and withdraw it to the left. Depress magazine catch flush with frame, and turn magazine catch lock (12) fully to left with a small screwdriver (inset). Remove entire magazine catch assembly. Drift out trigger pin (32) from left to right. Pull outward and downward on trigger w/sear bar (20) until the assembly can be removed through side of magazine well. Slide disconnecter (18) downward out of frame.



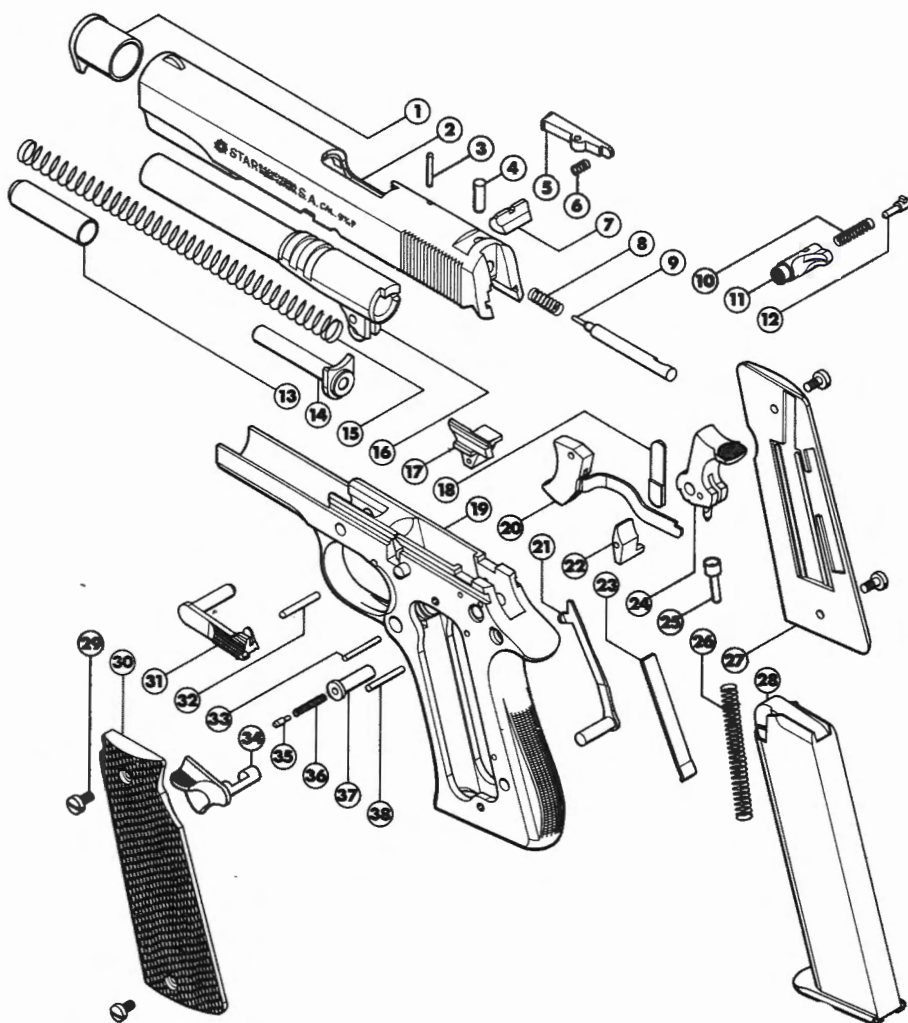
**5** Drift out sear pin (38) from right to left, and remove sear (22) and sear spring (23). Drift ejector pin (33) out to the left, and lift off ejector (17). Bend a piece of 1/16" brazing rod as shown (inset). Attach loop of rod to fixed frame pin. Draw back the hammer, and insert hook of rod within cup of hammer spring plunger (25). Adjust hook so that hammer is free of spring tension when fully forward. Push out hammer pin (37) and withdraw hammer. If hammer spring (26) must be removed, depress spring plunger with tapered punch and remove the tool. Then, ease out the plunger and spring cautiously.



**6** Assemble in reverse order. Before replacing the assembled slide, position the barrel link vertically. Start the slide on the inverted frame, align barrel link hole with slide stop hole in frame, and insert the slide stop. Move the slide further rearward to bring takedown notch opposite the slide stop lug, and fully seat the stop.



**7** Cutaway shows how the parts interrelate. Barrel is shown locked to slide, hammer is at half-cock, and manual safety is disengaged. Parts are number keyed to the parts legend.



#### Parts Legend

- |                             |                                |                                  |                          |                   |
|-----------------------------|--------------------------------|----------------------------------|--------------------------|-------------------|
| 1. Barrel bushing           | 9. Firing pin                  | 18. Disconnecter                 | 27. Grip, right          | 36. Safety spring |
| 2. Slide                    | 10. Magazine catch lock spring | 19. Frame                        | 28. Magazine, complete   | 37. Hammer pin    |
| 3. Extractor pin            | 11. Magazine catch             | 20. Trigger w/sear bar, complete | 29. Grip screws (4)      | 38. Sear pin      |
| 4. Firing pin retaining pin | 12. Magazine catch lock        | 21. Magazine safety              | 30. Grip, left           |                   |
| 5. Extractor                | 13. Recoil spring plug         | 22. Sear                         | 31. Slide stop, complete |                   |
| 6. Extractor spring         | 14. Recoil spring guide        | 23. Sear spring                  | 32. Trigger pin          |                   |
| 7. Rear sight               | 15. Recoil spring              | 24. Hammer w/strut and pin       | 33. Ejector pin          |                   |
| 8. Firing pin spring        | 16. Barrel w/link and pin      | 25. Hammer spring plunger        | 34. Thumb safety         |                   |
|                             | 17. Ejector                    | 26. Hammer spring                | 35. Safety plunger       |                   |



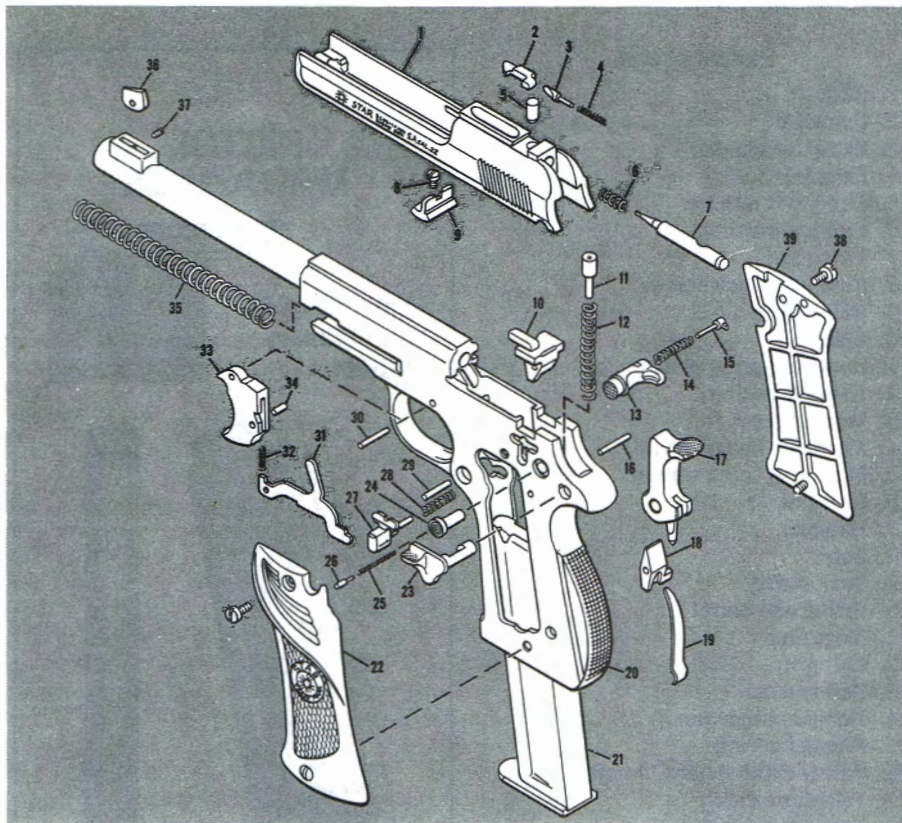
OVER the past 50 years, the firm of Bonifacio Echeverria, Eibar, Spain, has made a wide variety of handguns, most of which have been sold under the "Star" brand name. They range from small cal. .25 automatic pistols up to a full-automatic version of the Colt M1911. Of the handguns produced by this firm, the Model F cal. .22 pistol has found the widest acceptance.

Firearms International Corp. began importing the current cal. .22 Model F series in 1948. Three barrel lengths were available, 4¼", 6", and 7", plus a so-called Olympia model with weights and muzzle brake. The line was later simplified and only the 4¼" and 6" barrel models are now available.

The Model F does not have a slide hold-open device. Safety rules in force on most ranges require that the slide on any automatic pistol be open, except when on the firing line. Users of the Model F pistol must keep a block of wood or plastic handy to hold back the slide in compliance with these range safety regulations.

Aside from this, the pistol is of excellent design and incorporates a number of interesting features. The take-down system on this pistol is clever—press a button and lift off the slide.

The Model F has a very sturdy and well-designed magazine. The magazine follower is an aluminum casting and the floorplate is removable for easy cleaning. Except for one or 2 small stamped parts, the Model F is machined from steel. Internal parts such as the hammer, sear, and ejector are case-hardened for durability. The external finish and bluing are excellent, but some of the internal parts are not as well finished. The Model F is suitable for small-game hunting or informal target shooting.

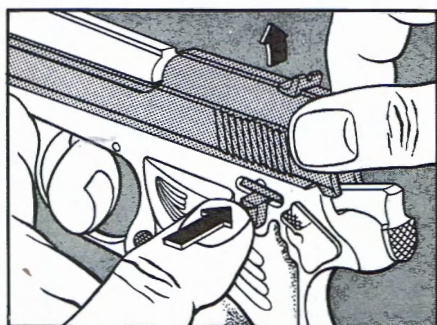


Parts legend next page

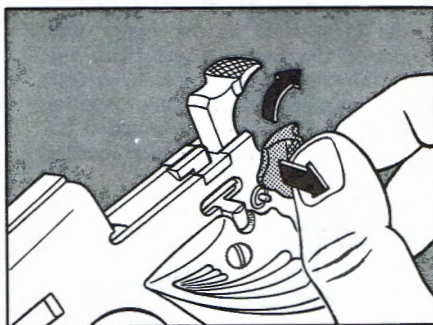


# STAR MODEL F CAL. .22 PISTOL

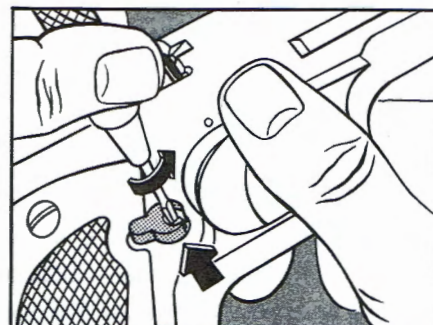
By EDWARD J. HOFFSCHMIDT



**1** The Star Model F pistol has a comparatively simple takedown system. To strip the pistol, begin by first removing the magazine and clearing the chamber. Next push in the takedown catch (27—lower arrow) and lift the rear of the slide upward (upper arrow). The slide (1) can now be stripped off the front of the barrel.



**2** The safety catch (23) can best be removed when the hammer (17) is in fired position. Rotate the safety catch to vertical position and wiggle it free of the frame (20). If in the right position, the catch will come out easily; never force it out. Do not let safety catch detent spring plunger (26) and spring (25) fly out when catch is removed.

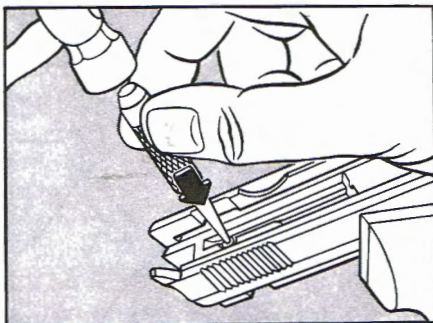


**3** The magazine catch (13) is retained in exactly the same manner as in the Colt M1911 pistol. To remove the magazine catch, push it in as if removing the magazine. At the same time turn the magazine catch retainer (15) until it locks into the catch. Then the magazine catch, retainer, and spring can be removed as a single assembly.



## Parts Legend

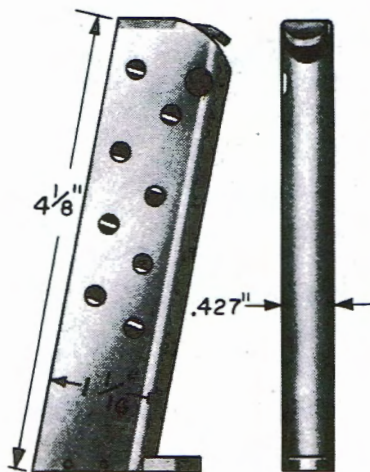
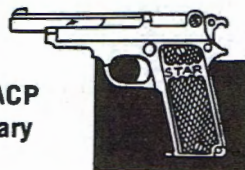
1. Slide
2. Extractor
3. Extractor plunger
4. Extractor spring
5. Firing pin retainer
6. Firing pin spring
7. Firing pin
8. Rear sight lock screw
9. Rear sight
10. Ejector
11. Hammer spring plunger
12. Hammer spring
13. Magazine catch
14. Magazine catch spring
15. Magazine catch retainer
16. Sear pin
17. Hammer
18. Sear
19. Sear spring
20. Frame and barrel
21. Magazine
22. Left grip
23. Safety catch
24. Hammer hinge pin
25. Plunger spring
26. Safety catch detent plunger
27. Takedown catch
28. Takedown spring
29. Ejector retaining pin
30. Trigger pin
31. Trigger bar
32. Trigger spring
33. Trigger
34. Trigger bar pin
35. Recoil spring
36. Front sight
37. Front sight screw
38. Grip screws (4)
39. Right grip



**4** The firing pin (7) is retained by pin (5). Since this retainer pin is located under the rear sight (9), the rear sight must be removed in order to get at the pin. Simply loosen the sight lock screw (8) and push out the rear sight. Then, hold the slide in a vise padded to prevent marring finish and drive out the pin (5) as shown in the illustration. ■

## PISTOL MAGAZINES

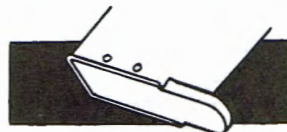
Cal. .32 ACP  
Star Military  
Pistol



Star pistols have become fairly common in America since the end of World War II. The earlier models, such as the military pistol shown, are not as common as later imports. The military model is an original design bearing some resemblance to early Mannlicher pistols. The safety rotates to shield the firing pin so that the shooter can dry-fire. Like the rest of the gun, the magazines are crudely finished but serviceable.

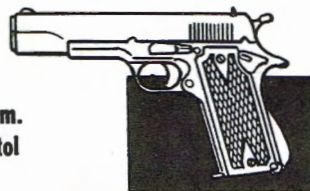


The main point of recognition is the large hole in the upper right side of the magazine wall. This hole is for the magazine catch to hold the magazine in the gun. Another point of identity is the rounded follower which permits easier loading.



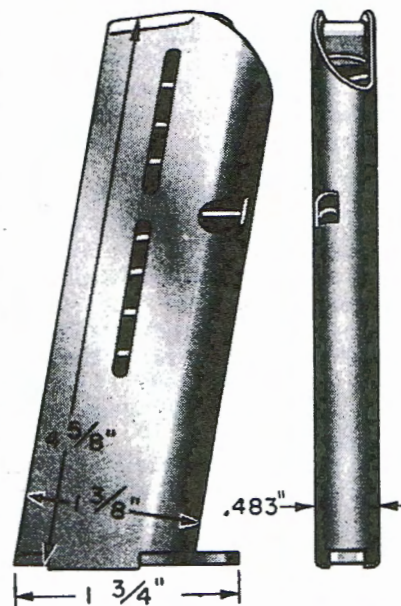
The floorplate, of typical Spanish design, is heavy and is pinned to the sides.—E. J. HOFFSCHMIDT

Star 9 mm.  
Auto Pistol

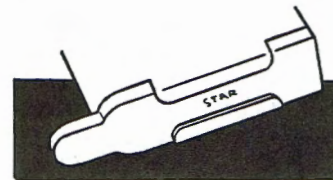


## PISTOL MAGAZINES

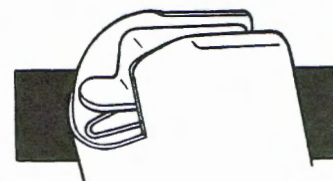
One of a series



Some Star automatics look and feel like a Colt Model 1911A1 but the resemblance stops there. While these copies of the 1911A1 are not too well made or finished, they will handle any 9 mm. Luger load, but it is hard to say how long they would hold up with Schmeisser or Sten gun loads, since the parts show little evidence of heat-treating.



Many of these guns were sold to the Germans, and so often turn up with German proofmarks. Others were purchased from traveling salesmen by GI's fighting in France near the Spanish border.



Magazines for 9 mm. Star automatics are large and heavily constructed. They can be identified by the brand on the floorplate, or by the long observation slots in only one side of the magazine. Another clue is the method of locking the floorplate to the magazine body with tabs as shown. The follower is stamped from flat sheet steel and bent to a step shape. This allows the lower step to push up the hold-open latch when the last shot is fired.—E. J. HOFFSCHMIDT



## EXPLODED VIEWS:

# STAR PD.45 PISTOL

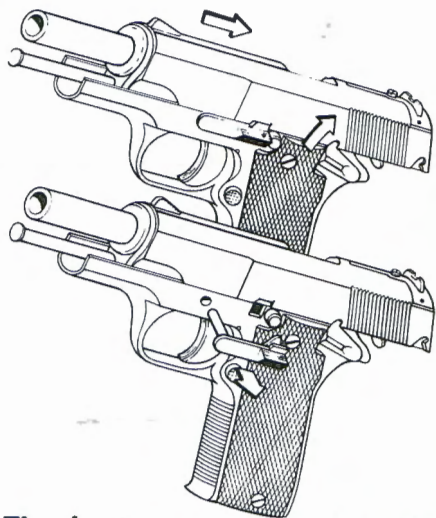
BY AGUSTIN GUISASOLA



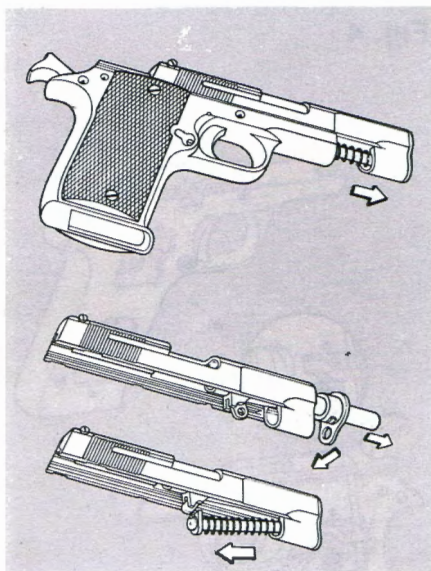
**M**ANUFACTURE of .45 ACP cal. pistols is not a new undertaking for Star Bonifacio Echeverria of Eibar, Spain. In the 1920s, they made .45 ACP versions of their various Modelo Militar pistols for export. Later, their Model A pistol was made in that caliber, and by the 1950s they had produced a selective-fire pistol complete with wooden shoulder stock/holster (Model MD) and three pistols of the P series. The standard P lacked a magazine safety; the PS had one, and the rare Super-P

had a quick-takedown lever on the right side of the frame.

In 1970, after several years of development, the PD was introduced. It was designed specifically for the U.S. market but has since proved popular throughout the world. With its aluminum frame, the PD is considerably lighter, shorter and more compact than any of the other Star .45s, and is equipped with a fully adjustable rear sight. At present it is the only .45 being made by Star or being sold by the U.S. importers, Interarms of Alexandria, Va. ■

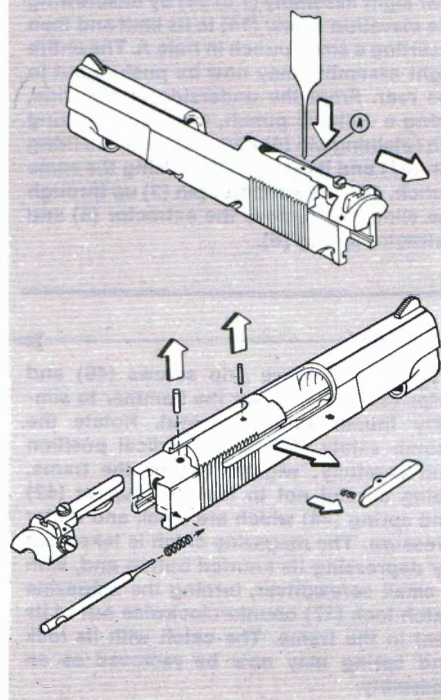


**Fig. 1.** Check to be sure gun is unloaded by depressing magazine catch (15), removing magazine (36), retracting slide (2) and examining chamber to be sure it is empty. With slide still retracted, push up on the thumb safety (43) so that its hook engages in the slide notch just forward of the finger serrations. The slide will now remain in its rearward position, and the slide stop (38) can be removed by pushing on its rod which protrudes from the right side of the frame.



**Fig. 2.** Hold the slide by its serrations to limit the recoil spring pressure and depress the thumb safety to allow the slide to ride forward off the frame (37). Lift recoil spring assembly (18 to 24) and remove it from the slide. Turn barrel bushing (1) counterclockwise and pull it and the barrel (49) forward from the slide.

**Fig. 3**





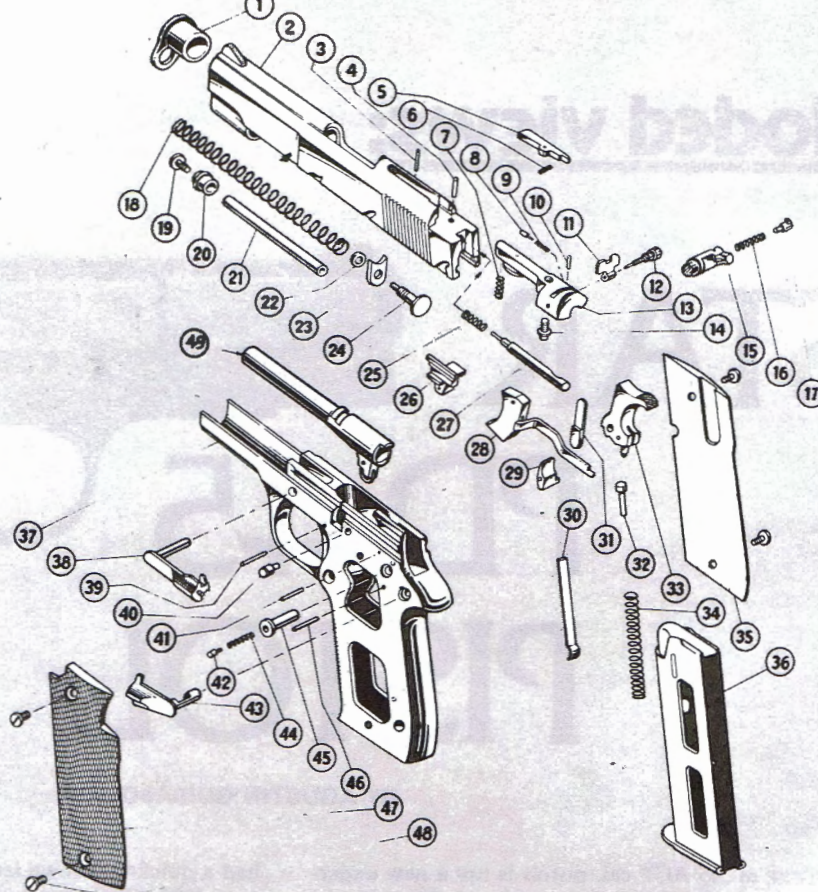
## PARTS LEGEND

1. Barrel bushing
2. Slide
3. Extractor pin
4. Firing pin retaining pin
5. Extractor
6. Extractor spring
7. Sight elevation spring
8. Sight windage spindle plunger
9. Sight windage spindle plunger spring
10. Sight windage spindle retaining pin
11. Sight slide
12. Sight windage spindle
13. Sight
14. Sight elevation screw
15. Magazine catch
16. Magazine catch lock spring
17. Magazine catch lock
18. Recoil spring
19. Recoil spring guide plug
20. Recoil spring guide washer
21. Recoil spring guide
22. Recoil spring guide washer
23. Recoil spring guide buffer
24. Recoil spring guide head
25. Firing pin spring
26. Ejector
27. Firing pin
28. Trigger assembly
29. Sear
30. Sear spring
31. Disconnecter
32. Hammer spring plunger
33. Hammer assembly
34. Hammer spring

35. Grip, right
36. Magazine assembly
37. Frame
38. Slide stop assembly
39. Trigger pin

40. Slide stop button
41. Ejector pin
42. Safety plunger
43. Safety
44. Safety plunger spring

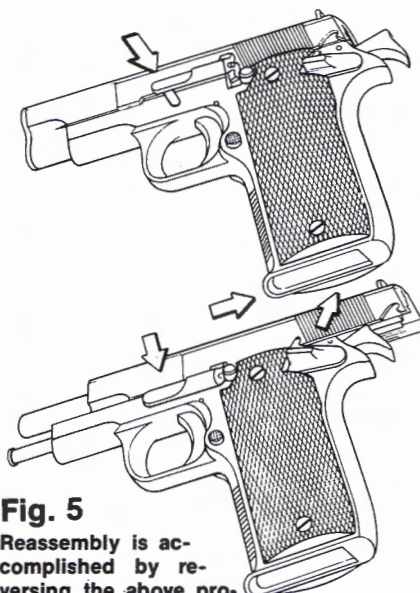
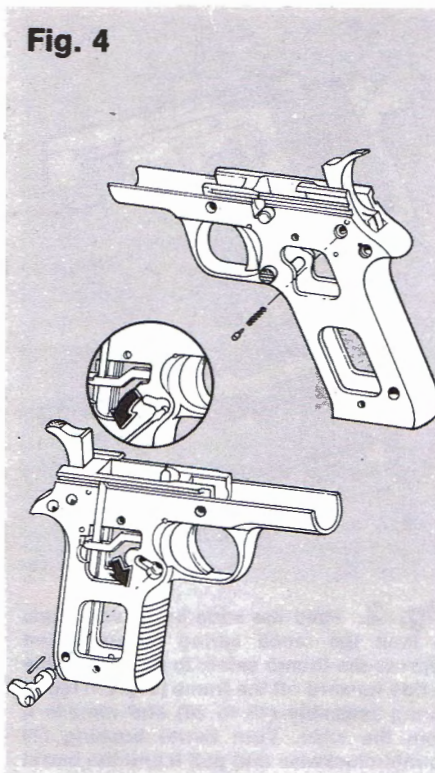
45. Hammer pin
46. Sear pin
47. Grip, left
48. Grip screw
49. Barrel with link and pin



**Fig 3.** To strip the slide, first remove the rear sight assembly (7 to 14) by unscrewing the elevation screw (14) to its limit and then inserting a small punch in hole A. The entire sight assembly may now be pushed out to the rear. From the underside of the slide, using a suitable punch, drive up the firing pin retaining pin (4) and remove it, the firing pin (27) and its spring (25). Using the same punch, drift the extractor pin (3) up through the slide and remove the extractor (5) and extractor spring (6).

**Fig. 4.** Remove grip screws (48) and grips (35 & 47). Lower the hammer to simplify thumb safety removal. Rotate the thumb safety (43) to its vertical position and carefully "wiggle" it from the frame, being careful not to lose its plunger (42) and spring (44) which are small and under pressure. The magazine catch is taken out by depressing its knurled button and, with a small screwdriver, turning the magazine catch lock (17) counterclockwise out of its seat in the frame. The catch with its lock and spring may now be removed as an assembly.

**Fig. 4**



**Fig. 5**

Reassembly is accomplished by reversing the above procedures, but before replacing the assembled slide on the frame, tilt the barrel link forward. After reinstalling the slide unit on the frame, align the barrel link hole with the slide stop hole in the frame before partially inserting the slide stop rod. Then lock the slide back with the thumb safety hook and fully seat the slide stop.





# STEYR MODEL 1912 PISTOL

By E. J. HOFFSCHMIDT

**T**HE Steyr Model 1912 9 mm. automatic pistol, designed and produced by the Austrian Arms Co., Steyr, Austria was the principal Austro-Hungarian handgun during World War I. Introduced in 1911, it was adopted by the Austro-Hungarian Army in 1912.

Several references list this exposed-hammer pistol as a Model 1911 (some are marked "M.1911") while other sources call it Model 1912, the designation used by the Austro-Hungarian Army. Another name commonly used is Steyr-Hahn (Steyr-hammer). This unofficial designation distinguishes the pistol from the Austro-Hungarian Roth-Steyr Model 1907 hammerless pistol.

One chief characteristic of the Steyr Model 1912 is its short-recoil action with revolving barrel. During the period of high pressure, the barrel is locked to the slide. As the slide and barrel start back, the barrel is revolved about 60° on its long axis by a cam, and is unlocked. The slide continues its rearward motion alone.

Another principal feature is the non-detachable magazine in the grip. Accessible only from the top, it is loaded by using an 8-round strip clip, or inserting cartridges singly. After the last round is fired, the slide is locked back by the magazine follower.

The safety is on the left of the receiver. When pivoted upward, it locks both the hammer and slide. It is also used to lock the slide to the rear. This is done for loading singly, and unloading. Cartridges can be released from the magazine by depressing the cartridge re-

lease above the left grip.

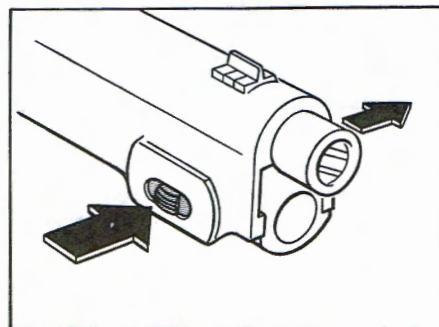
Barrel length is 5½", and over-all length is 8½". Weight empty is 34 ozs., about average for a large 9 mm. military handgun. Large checkered walnut grips and the well-distributed weight make for favorable handling qualities. However, the grip is almost at a right angle with the line of bore, which is not good for natural pointing.

Functioning is reliable, and accuracy is sufficient for military use. Features which aid reliability are the well-enclosed action and non-detachable magazine. There are no fragile sheet metal magazine lips to become bent, and the magazine cannot be accidentally lost.

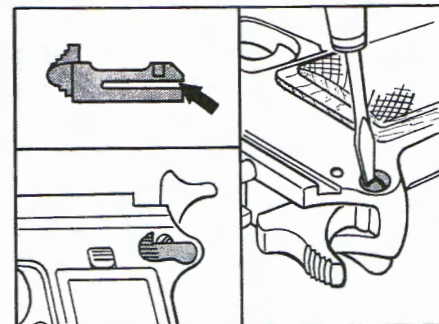
The 9 mm. Steyr cartridge for this pistol is not produced in the U.S., but is available from dealers in surplus military ammunition. Of straight-case rimless design, it has a 117-gr. full metal-jacketed bullet, driven at 1215 feet per second muzzle velocity. Muzzle energy is 385 ft.-lbs.

In addition to being used by Austria-Hungary, the Steyr Model 1912 was adopted by Rumania and Chile. It was also used by police units in Austria during World War II. Some of these specimens were converted to fire the 9 mm. Luger cartridge, and are marked "08", a German military designation for this round.

Sturdy and very well made, this pistol was produced in large quantity, but it never achieved widespread popularity. It was discontinued at the end of World War I.

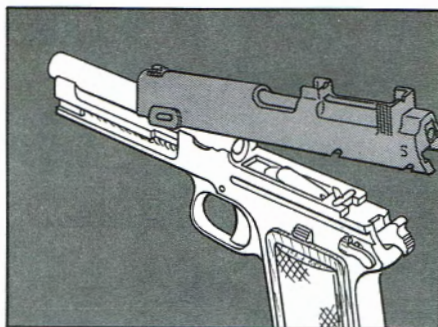


**1** To field-strip the pistol, clear the magazine and chamber. Then depress the serrated end of the wedge spring, and push the wedge (2) out of the slide (4) and receiver (30).

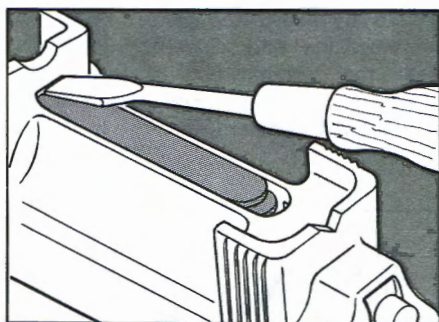


**3** For further disassembly, lower the hammer (8), and remove any dirt from the slotted pin part of the safety (19). Then turn the safety so that it points forward, and use a punch or small screwdriver to push it to the left out of the receiver. Unscrew the hammer screw (18), and remove the hammer. Use a screwdriver to compress the upper rear of the recoil spring retainer (11), and push the retainer out forward. Then remove the recoil spring (13) and recoil spring caps (12) (14). Slightly depress the ejector and disconnector (9), and use a small screwdriver to gently pry out the trigger bar (7). Then lift out the ejector and disconnector. Turn out the grip and floorplate screw (22), slide the grips (21) and (31) out of the receiver, and remove the floorplate (23) with attached springs, the magazine spring (28), and magazine follower (27). Depress the cartridge release spring (20), turn it forward a quarter turn, and lift from receiver. Also remove the cartridge release (17). Driving out the trigger pin (16) and removing the trigger (15) completes disassembly of the receiver group.

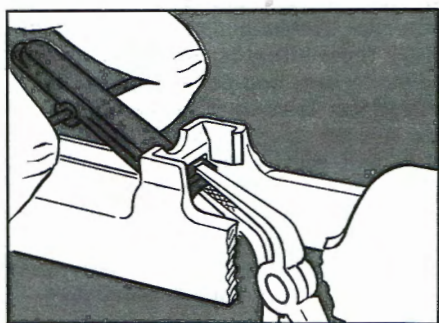




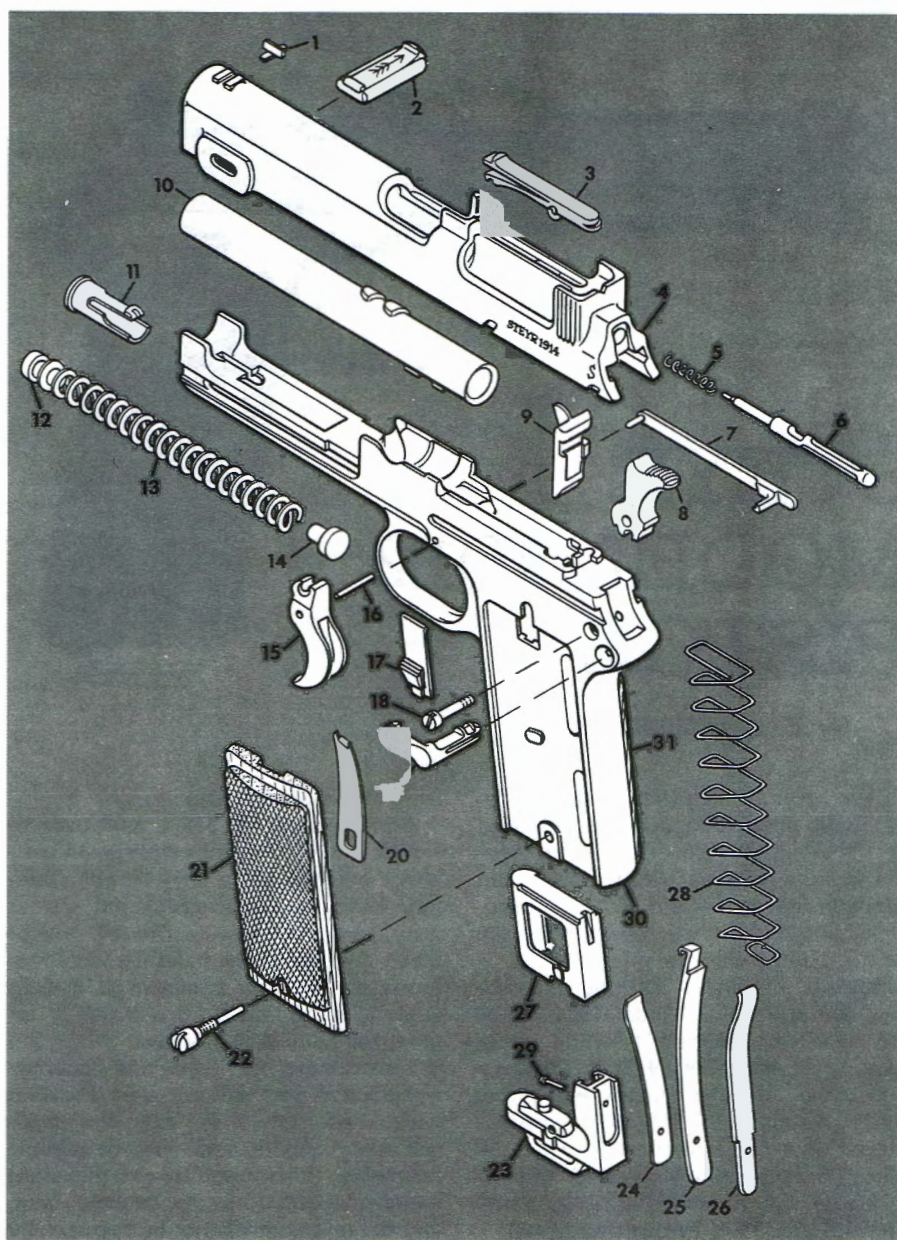
**2** Pull the slide all the way back and lift it off the receiver. The barrel (10) can then be removed. In reassembly, the barrel must be positioned so the locking lugs are to the right.



**4** Place a screwdriver on the upper front of the extractor (3), and push down and forward. After the extractor is pushed forward, lift it at the rear to free the firing pin (6), and remove the firing pin and firing pin spring (5).



**5** Use a needle-nose plier (one with bent jaws is preferable) to compress the extractor limbs at the front. Then push the extractor rearward until the lug on its upper limb is behind the loading port. Push the extractor hook upward with a brass punch or rod, and force the extractor rearward out of the slide. An aid in doing this is to put a pin or nail through the hole in the extractor to provide a finger grip. ■



#### Parts Legend

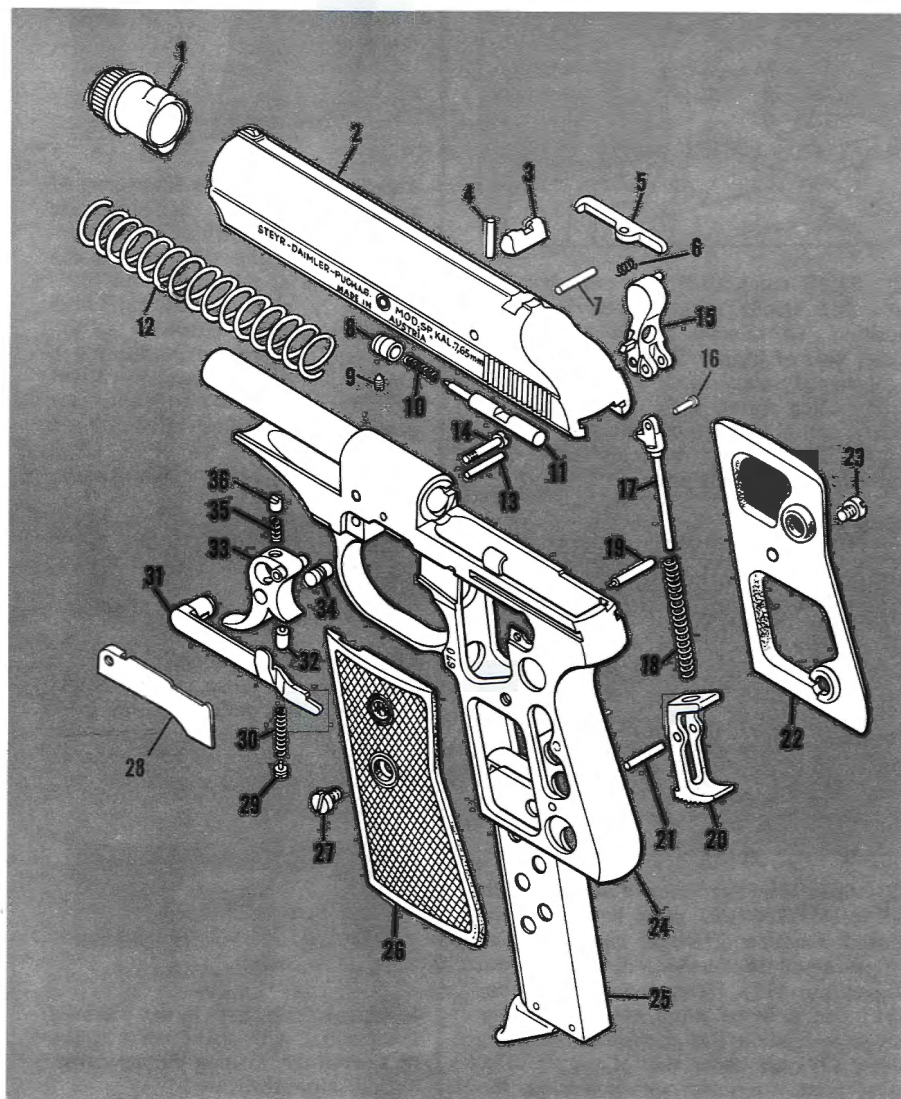
- |                             |                               |
|-----------------------------|-------------------------------|
| 1. Front sight              | 16. Trigger pin               |
| 2. Wedge                    | 17. Cartridge release         |
| 3. Extractor                | 18. Hammer screw              |
| 4. Slide                    | 19. Safety                    |
| 5. Firing pin spring        | 20. Cartridge release spring  |
| 6. Firing pin               | 21. Left grip                 |
| 7. Trigger bar              | 22. Grip and floorplate screw |
| 8. Hammer                   | 23. Floorplate                |
| 9. Ejector and disconnecter | 24. Disconnecter spring       |
| 10. Barrel                  | 25. Sear and sear spring      |
| 11. Recoil spring retainer  | 26. Hammer spring             |
| 12. Front recoil spring cap | 27. Magazine follower         |
| 13. Recoil spring           | 28. Magazine spring           |
| 14. Rear recoil spring cap  | 29. Spring retainer pin       |
| 15. Trigger                 | 30. Receiver                  |
|                             | 31. Right grip                |





# Steyr Model SP Pocket Pistol

By E. J. HOFFSCHMIDT



**T**HE Steyr Model SP cal. 7.65 mm. (.32 ACP) double-action pistol was introduced in the late 1950's. Manufactured by Steyr-Daimler-Puch A. G., Steyr, Austria, the Steyr SP is a true double-action design. Since there is no provision in this pistol for single-action operation, the internal hammer does not stay cocked after every shot as in conventional semi-automatic pocket pistols; the trigger must be pulled through its full cycle to cock and release the hammer for each shot. There is an inertia firing pin within the slide.

A unique feature of the Model SP pistol is the cross-bolt safety catch in the trigger. When pushed to the left with the trigger finger, the catch engages the frame to block rearward movement of the trigger. Safety is disengaged by pressing it to the right with the thumbnail of the gun hand.

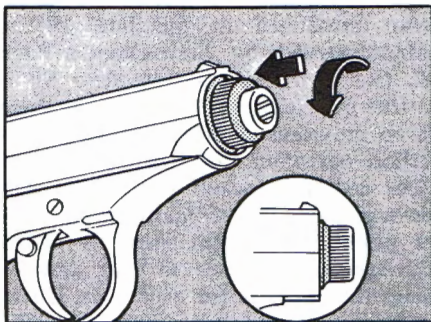
Magazine catch is in the butt of the gun. Of sheet metal construction, the detachable box magazine holds seven cal. 7.65 mm. cartridges. When the last shot is fired, the slide is held in open position by the magazine follower. Partially withdrawing the magazine from the grip releases the slide, which is then free to go forward under pressure from the recoil spring.

All major components of the Model SP pistol are steel with blue finish. The checkered grips are of black plastic.

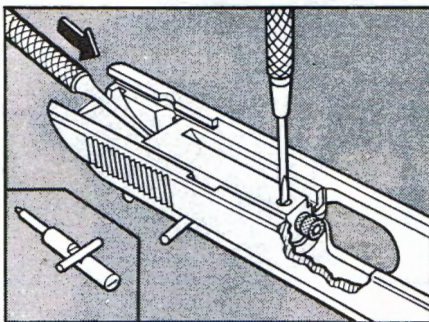
## Parts Legend

1. Barrel bushing
2. Slide
3. Rear sight
4. Extractor pin
5. Extractor
6. Extractor spring
7. Firing pin retaining pin
8. Firing pin bushing
9. Firing pin bushing lock screw
10. Firing pin spring
11. Firing pin
12. Recoil spring
13. Trigger pin
14. Sideplate screw
15. Hammer
16. Hammer strut pin
17. Hammer strut
18. Hammer spring
19. Hammer hinge pin
20. Magazine catch
21. Magazine catch pin
22. Right grip
23. Grip screw
24. Frame
25. Magazine
26. Left grip
27. Grip screw
28. Sideplate
29. Trigger spring retaining screw
30. Trigger spring
31. Trigger bar
32. Trigger spring follower
33. Trigger
34. Safety catch
35. Safety catch spring
36. Safety catch detent

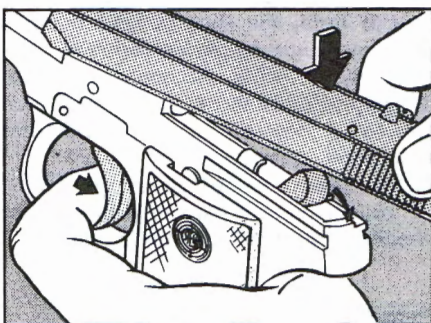




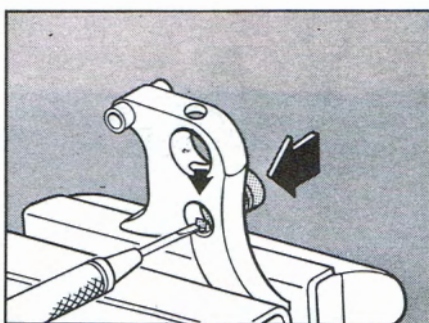
**1** To take down the Steyr Model SP pistol, first remove the magazine, and pull back slide and examine chamber to be sure that it is empty. Push in barrel bushing (1) and turn about 15° counter-clockwise until it is free to be eased off barrel. Then pull slide (2) to rear and lift it free of frame (24), and slide it off front of barrel.



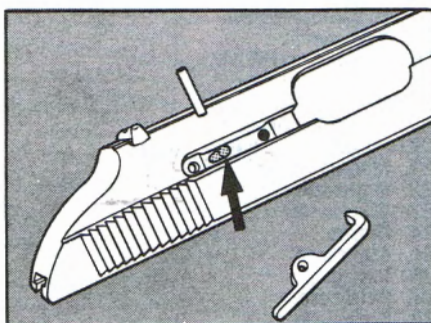
**4** To remove firing pin, drive out firing pin retaining pin (7). Then loosen firing pin bushing lock screw (9). Firing pin (11) can now be pushed or tapped out through front of breech. It will in turn push out bushing and firing pin spring (10). Before reassembling firing pin, scribe or pencil a line across large end of pin parallel to flat on pin. Line is an aid in positioning flat to let firing pin retaining pin (7) pass through.



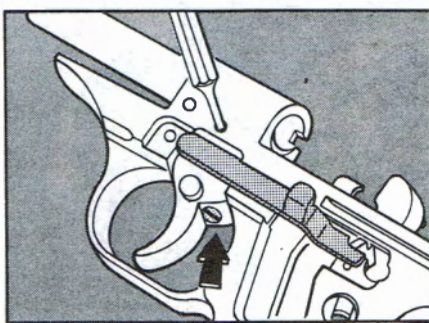
**2** When reassembling pistol, put slide back over barrel and pull it back as far as possible. Pull trigger about half way back to partially cock hammer. Then push down on rear of slide until it engages grooves in frame. Install recoil spring (12) and barrel bushing. When barrel bushing is properly seated, it should be flush with end of barrel.



**5** Safety catch (34) is a cross-bolt pin that blocks trigger when in "safe" position. To remove it, tap pin out of either side of trigger. Safety is retained by a V-shaped safety catch detent (36) and safety catch spring (35). When replacing safety, install spring and detent in hole in trigger. Hold detent down as shown and tap safety catch into place.



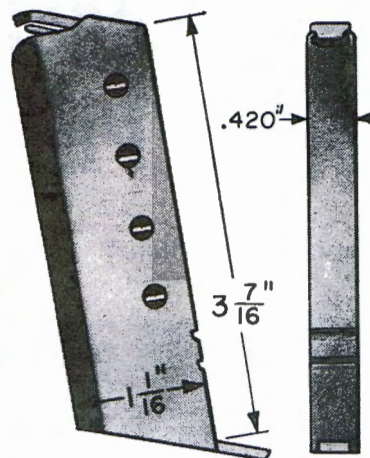
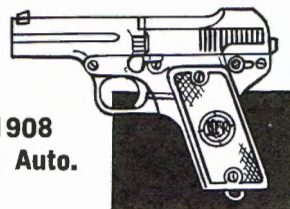
**3** To remove firing pin, it is necessary to first remove extractor (5). Drive out extractor pin (4) and remove extractor and extractor spring (6). When extractor is removed, it exposes end of firing pin retaining pin (7) and also exposes a hole that can, if necessary, be of assistance in removing a stuck firing pin bushing (8) or in carrying off gases in event of a punctured primer.



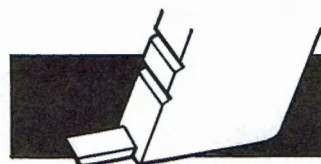
**6** After sideplate screw (14) and sideplate (28) and grips have been removed, function of trigger can be studied or disassembled further. First drive out trigger pin (13). Trigger and trigger bar (31) can now be lifted out. To remove trigger bar, remove trigger spring retaining screw (29) on under side of trigger carefully, since it is under spring tension. Remove trigger spring (30) and trigger spring follower (32). Lift out trigger bar. ■

## PISTOL MAGAZINES

Steyr  
Model 1908  
Cal. .32 Auto.  
Pistol



The Steyr Model 1908 is an unusual arm. Although a semi-automatic pistol, it can also be used as a single-loader. When the side-lever is depressed, the barrel flips up for loading. Early guns lacked extractors and depended on blowback to extract the empty cases. Although functioning was satisfactory without an extractor, one was added to later guns to improve their reliability.



Easiest point of recognition for a Steyr magazine is the reversed floorplate and the 2 notches in the back strap. When magazine is gripped by the upper notch, it is held clear of the slide so that the gun can be used as a single shot.



Magazine follower is a flat piece of sheet metal with slight bend at the tip to facilitate loading the magazine.  
—E. J. HOFFSCHMIDT





# The Tokarev Pistol

By E. J. Hoffschmidt

## Legend

- A—Slide
- B—Extractor retaining pin
- C—Extractor
- D—Extractor spring
- E—Rear sight
- F—Firing pin spring
- G—Firing pin
- H—Hammer
- I—Hammer spring
- J—Hammer mechanism housing
- K—Sear spring
- L—Sear
- M—Disconnecter
- N—Spring retainer pin
- O—Hammer pin
- P—Sear pin
- Q—Right hand grip
- R—Magazine
- S—Trigger return spring
- T—Spring retainer pin
- U—Left hand grip
- V—Trigger
- W—Magazine catch spring guide
- X—Magazine catch spring
- Y—Slide stop
- Z—Frame (receiver)
- AA—Recoil spring guide
- BB—Recoil spring retainer
- CC—Recoil spring
- DD—Slide stop retainer clip
- EE—Magazine catch
- FF—Barrel link
- GG—Barrel link pin
- HH—Firing pin retainer pin
- II—Barrel
- JJ—Barrel bushing

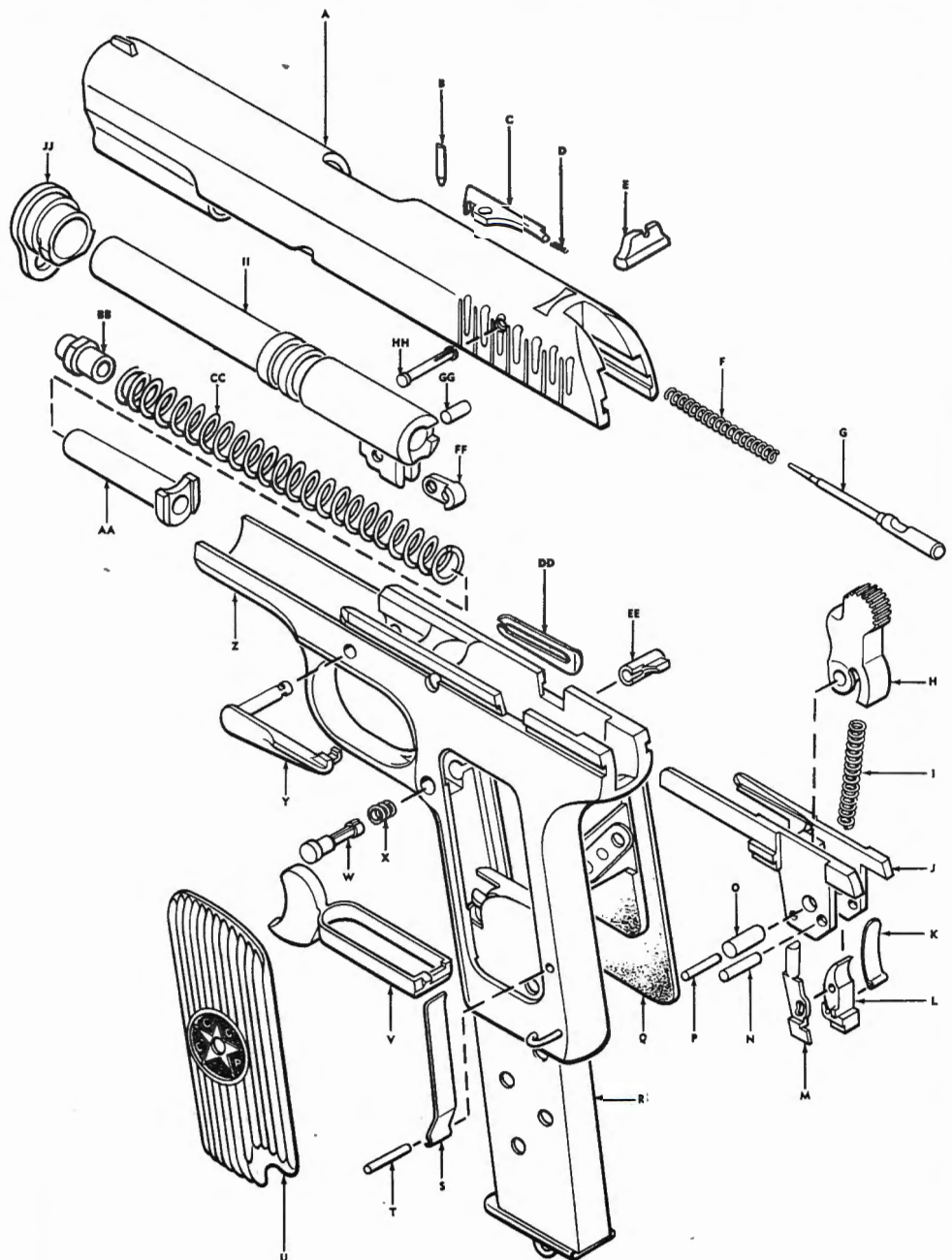




Figure 1—Remove the magazine. Draw back the slide to eject any cartridge in the chamber. Using the back edge of the bottom plate of the magazine as a tool, pull back hard on the slide stop retainer clip (DD) until it releases. Then push the slide stop (Y) through from right to left.

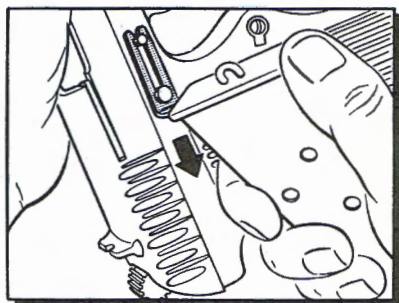


Figure 2—Draw the slide off the front of the frame slowly. As soon as the recoil spring is exposed, hold it up against the barrel to prevent it from bending out of the slide. While holding the recoil spring in place, grasp the recoil spring guide (AA) and push it toward the muzzle, while lifting it free of the barrel lug.

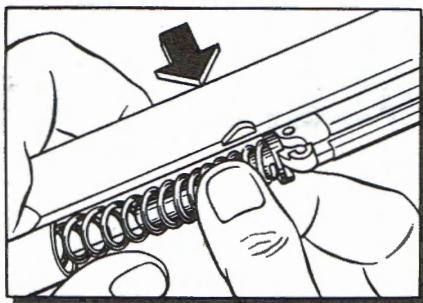
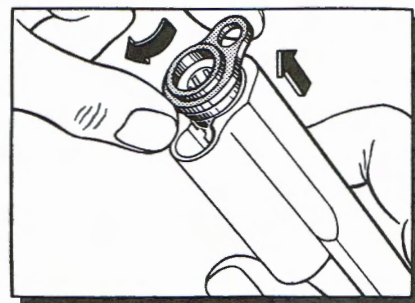


Figure 3—The barrel bushing (JJ) can now be turned 180 degrees and then lifted free of the slide. The barrel (II) can now be pulled out the front of the slide. This method of "take down" will be found much simpler than the one usually recommended for the take down of similar Browning type pistols.



THE Tokarev automatic pistol Model 30 in 7.62 Russian or 7.63 Mauser caliber, like other products designed by the Russians during the 1930's, was made with an eye for ease of production. During that period, Russia was woefully lacking in machine tools; therefore every unnecessary machining operation was eliminated. It is interesting to note, also, that the Tokarev was designed around the time-proven Browning recoil-operated slide lock and stirrup type trigger. The net result was a simple, compact, and dependable automatic pistol, but without manual safety catches or any finely machined parts. I have yet to see a Tokarev automatic, either pre-war or post-war, that measures up to American machining standards.

The one really bad feature of the Tokarev in an otherwise good design, is the lack of a manual safety catch. If the gun is carried at full cock, the danger is obvious. If the gun is carried at half-cock, the awkward hammer shape makes it difficult to get the first shot off quickly. Another drawback, measured by American standards, is the small caliber. The 7.62 Russian or the .30 caliber Mauser, both of which may be fired in the Tokarev, is an excellent man-stopper when soft-point or hollow-point bullets are used, but with jacketed bullets it lacks the stopping power so necessary in a close combat weapon. The angle of the grip is a little too straight. The Tokarev lacks the fine feel of similar type Browning

designs, such as the Colt .45 semi-automatic pistol.

In spite of all the above comments, the Tokarev contains some very interesting points. The most notable of these is the hammer mechanism. This mechanism can be lifted out as a unit after the slide has been removed. The unit not only houses the sear, disconnecter, and hammer, but also acts as feed lips for the 8-round magazine. Since these lips are an integral part of the gun mechanism, they are not subjected to the rough treatment that magazine lips normally get. In the right side of the housing (part J), there is an inspection hole. Through here can be seen the operation of the hammer and sear. It is also possible to see any dangerous wear on the sear or sear notch in the hammer without disassembling the unit.

There is very little that can go wrong with the Tokarev, which weighs one pound fifteen ounces, measures 7-11/16 inches in overall length, and has a barrel 4-9/16 inches long. The weakest parts of the gun are the split pins used to retain the magazine catch and firing pins (parts HH and W). These pins have a tendency to break at the bottom of the slot unless they are squeezed together while being removed. The Tokarev grips are another headache. They are made of a resin composition which chips easily. All in all, the simplicity of the design and of the parts make this pistol an easy weapon to repair. ♦ ♦ ♦

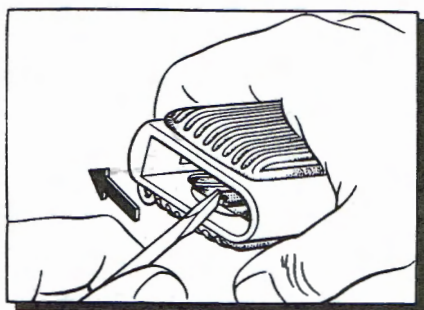


Figure 4—The grips on this weapon are held on with a latch arrangement. Holding the gun as shown a T-shaped piece of steel can be seen. Reach in with a screw driver and push the T-shaped piece toward the rear of the gun grip. The left-hand grip can now be removed by pushing against the inside surface. Do not attempt to pry the grip from the outside—the plastic is a very low grade and will chip along the edges.

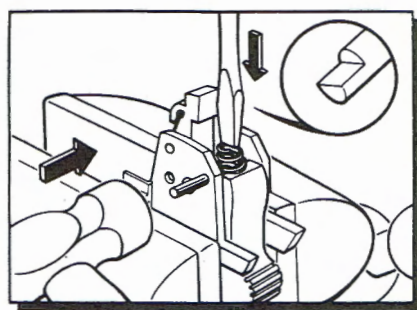


Figure 5—The hardest section on this gun to disassemble or assemble is the hammer group, but after removing the hammer spring retainer pin (N), the other pins may be removed easily. To reassemble, replace all parts but the hammer spring. Using a screw driver or tool shown in the insert, depress the spring (I) deep enough to allow the pin (N) to hold it. Then tap the pin all the way through.

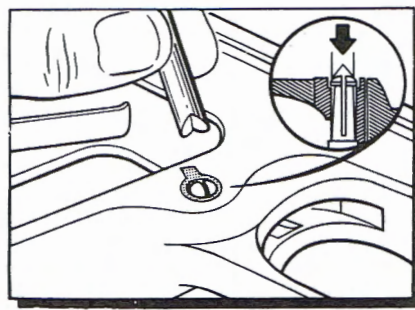


Figure 6—The firing pin and the magazine catch are retained by split pins. These split pins (HH) and (W) can be removed with the aid of the tool shown. This tool forces the pin to close up so that it may be pushed out easily. If an attempt is made to drive the pins out with a flat-end punch, they may be broken or badly deformed.



# UNIQUE MILITARY AND POLICE PISTOL

By DENNIS RIORDAN

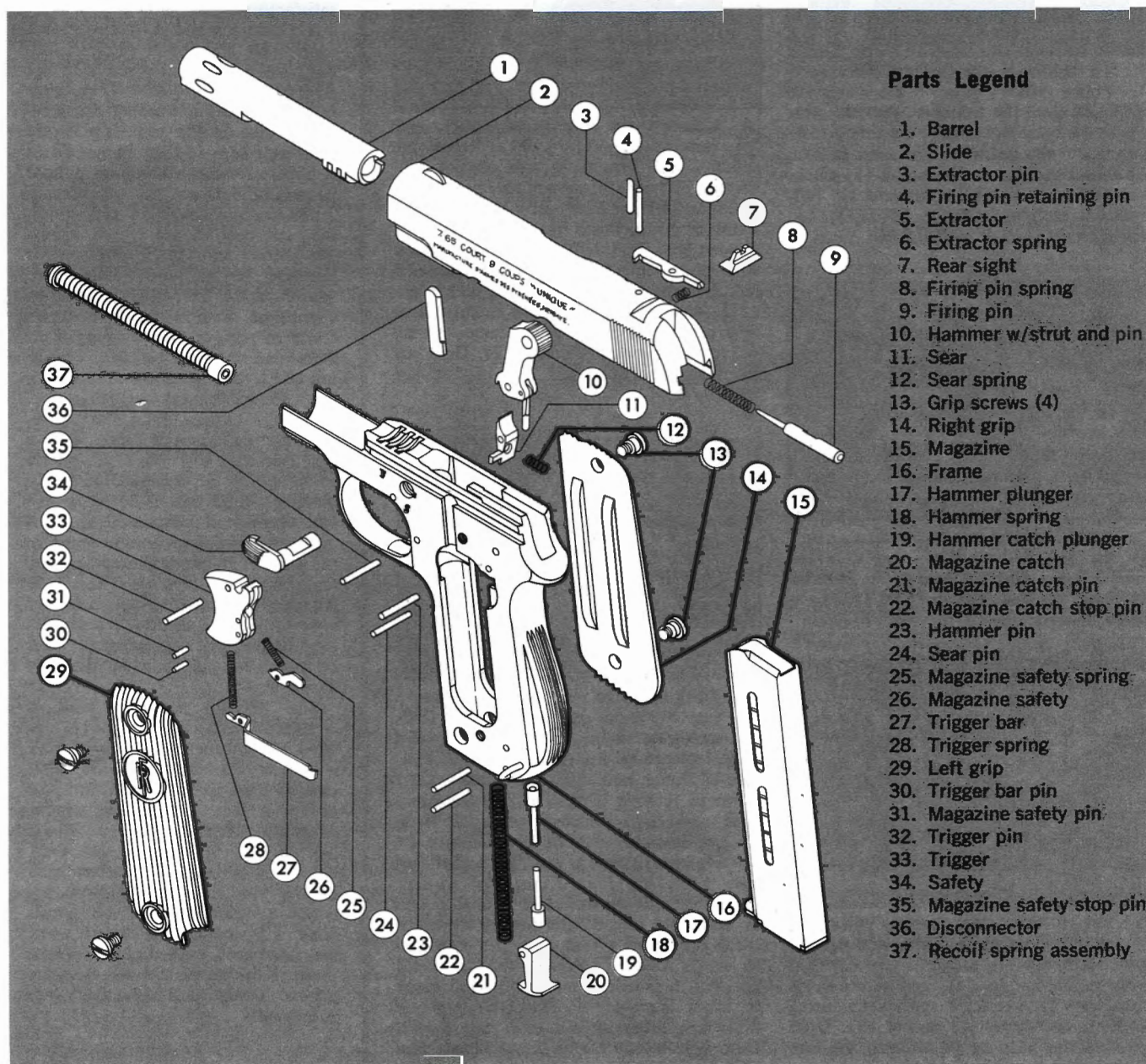
**D**URING World War II, the Germans used many substitute-standard small arms, among them the Unique Military & Police Model 7.65 mm. (.32 ACP) automatic pistol. Commonly called the *Kriegsmodell* (War Model), this blowback-operated pistol was designed and produced by Manufacture d'Armes des Pyrenees Francaises, Hendaye, France. It has a 9-round detachable magazine, and weighs 26½ ozs. The barrel is 3¼" long.

Of simple, straightforward design, this pistol has an exposed hammer with rounded spur. The safety is on the left of the frame above the trigger, and the hammer has a half-cock notch. When the chamber is loaded, the extractor projects from the slide and serves as a loading indicator. The magazine catch is on the bottom of the handle.

The grips are black plastic with vertical serrations. Each has a circular shield marked with the caliber and mag-

azine capacity. The marking on specimens made for German use is "7.65 M/M. 9 SCHUSS." On specimens made for French use, the marking is "7.65 M/M. 9 COUPS." There are also specimens with the grips bearing the interlocked letters "RF," presumably for *Republique Francaise*.

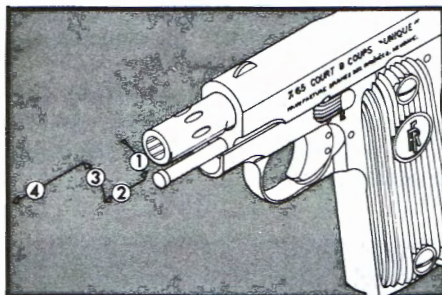
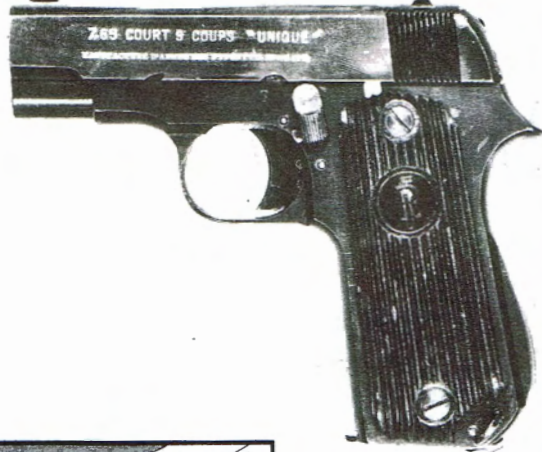
While this pistol is only fairly well made and finished, it is strong, serviceable, and sufficiently accurate for its intended purpose.



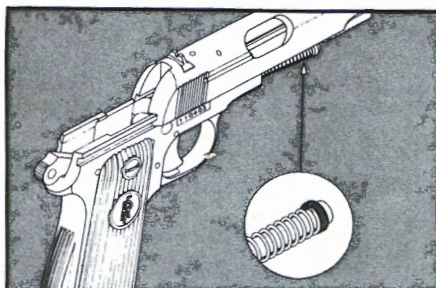
## Parts Legend

1. Barrel
2. Slide
3. Extractor pin
4. Firing pin retaining pin
5. Extractor
6. Extractor spring
7. Rear sight
8. Firing pin spring
9. Firing pin
10. Hammer w/strut and pin
11. Sear
12. Sear spring
13. Grip screws (4)
14. Right grip
15. Magazine
16. Frame
17. Hammer plunger
18. Hammer spring
19. Hammer catch plunger
20. Magazine catch
21. Magazine catch pin
22. Magazine catch stop pin
23. Hammer pin
24. Sear pin
25. Magazine safety spring
26. Magazine safety
27. Trigger bar
28. Trigger spring
29. Left grip
30. Trigger bar pin
31. Magazine safety pin
32. Trigger pin
33. Trigger
34. Safety
35. Magazine safety stop pin
36. Disconnecter
37. Recoil spring assembly

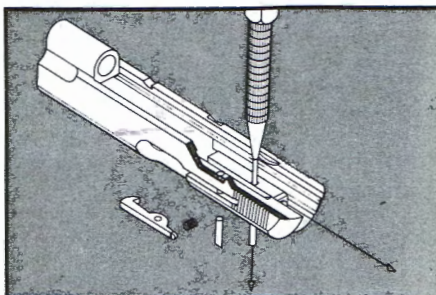




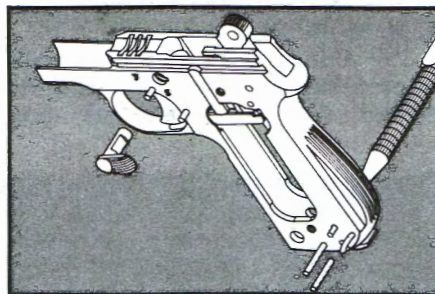
**1** To field-strip the Unique Military & Police Model, remove the magazine (15) and clear the chamber. Pull the slide (2) to the rear, and engage the safety (34) with the front notch on the slide to lock the slide back. Rotate the barrel (1) clockwise 60° (step 1), pull it forward 3/4" (2), rotate it counterclockwise 60° (3), and pull forward (4) out of the slide.



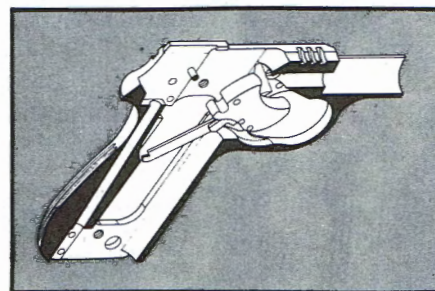
**2** While holding the slide firmly, turn the safety downward, and ease the slide forward off the frame (16). Remove the recoil spring assembly (37). This completes field-stripping.



**3** For further disassembly, place the slide bottom up in a vise with padded jaws. Drift out the extractor pin (3) and firing retaining pin (4), and remove the extractor (5), extractor spring (6), firing pin (9), and firing pin spring (8). Drift out retaining pins in the slide to the top; those in the frame from right to left.



**4** Unscrew the grip screws (13), and remove grips (14), (29). Rotate the safety a half turn from safe position and lift out of frame. Re-insert magazine, hold hammer (10), pull trigger (33), and ease hammer down. Place frame in a vise with padded jaws, and drift out magazine catch stop pin (22). While holding magazine catch (20), drift out magazine catch pin (21), and remove magazine catch, magazine catch plunger (19), hammer spring (18), and hammer plunger (17). Drift out hammer pin (23), and remove hammer with strut.



**5** Drift out sear pin (24), and remove sear (11) and sear spring (12). Drift out magazine safety stop pin (35) and trigger pin (32). Pull trigger bar (27) inside of frame, and slide disconnect (36) down to remove it. Roll trigger assembly back and down through magazine well. Trigger assembly can be disassembled by drifting out trigger bar pin (30) and magazine safety pin (31) from right to left. Reassemble in reverse. Use a drift punch or slave pin to aid insertion of magazine catch pin. Head of extractor pin is shaped to match rounded top of slide. Drive this pin with a plastic hammer or wood block to avoid damaging it. Extractor pin and firing pin retaining pin must not project from bottom of slide or they will interfere with slide movement.

## DECAPPING BERDAN PRIMERS

**T**HE problem of decapping Berdan-primed cartridge cases has been wrestled with by Europeans for many years. Living in England, I have tried all the European decapping tools I have been able to obtain, but have found them to be troublesome in use and hard on expensive cases.

Because of my dissatisfaction with existing decapping equipment, I experimented with other methods and eventually developed two that are satisfactory.

The first method is used with G.I. cases with crimped-in primers. Initially cases are neck sized with the Lyman Ideal #310 tool. Then, after fitting the neck expanding die, I insert a case in the tool. The entire tool with case is then immersed in a bowl of water containing a little household detergent as a lubricant. After the case has filled with water, the tool handles are closed firmly. The primer pops out from hydraulic pressure set up inside the case. Mouth of the primer pocket is then chamfered with a sharp penknife blade to remove the crimping burr. This operation simplifies future priming and I use my Lyman Truline Jr. press for subsequent decapping.

For the Lyman tool I make a decapping rod about 3" long with a diameter that will just enter mouth of the case to be decapped. A small-diameter blind hole is bored in one end of the rod offset slightly from the center. Another hole is bored in the side of the rod to intersect the top part of the first hole. This hole is tapped for a small Allen-head set-screw to secure the piano wire decapping pin. The decapping pin must be small enough to enter the case flashhole.

Use of this decapping rod is straightforward. The needle is entered in the mouth of the case until it touches the case web. A slight twist is then given the rod until the needle is felt to enter one of the flashholes. Then the case and punch assembly is inserted in the shellholder of the tool. The turret head of the tool is turned midway between stations so that the punch head will contact the turret when the handle is pushed down. Light pressure on the handle will eject the primer easily and effectively.—J. ANDERSON





# U.S. MODEL 1842 PERCUSSION PISTOL

By EDWARD J. HOFFSCHMIDT

**T**HE Model 1842 cal. .54 percussion pistol with 6" round barrel was manufactured by N. P. Ames of Springfield, Mass., and by Henry Deringer of Philadelphia, Pa.

Those made by Ames have a smoothbore barrel and are dated 1842, 1843, 1844, and 1845, according to year of manufacture. They are found both with and without brass blade front sights. Those made for the Navy are marked

"U.S.N.". Those made for the U. S. Mounted Rifles or U. S. Revenue Service are marked "U.S.R.".

Model 1842 pistols made by Deringer are encountered with both smoothbore and rifled barrels, with the latter having both front and rear sights. Most are unmarked as to date of production, but a few bear the date 1847.

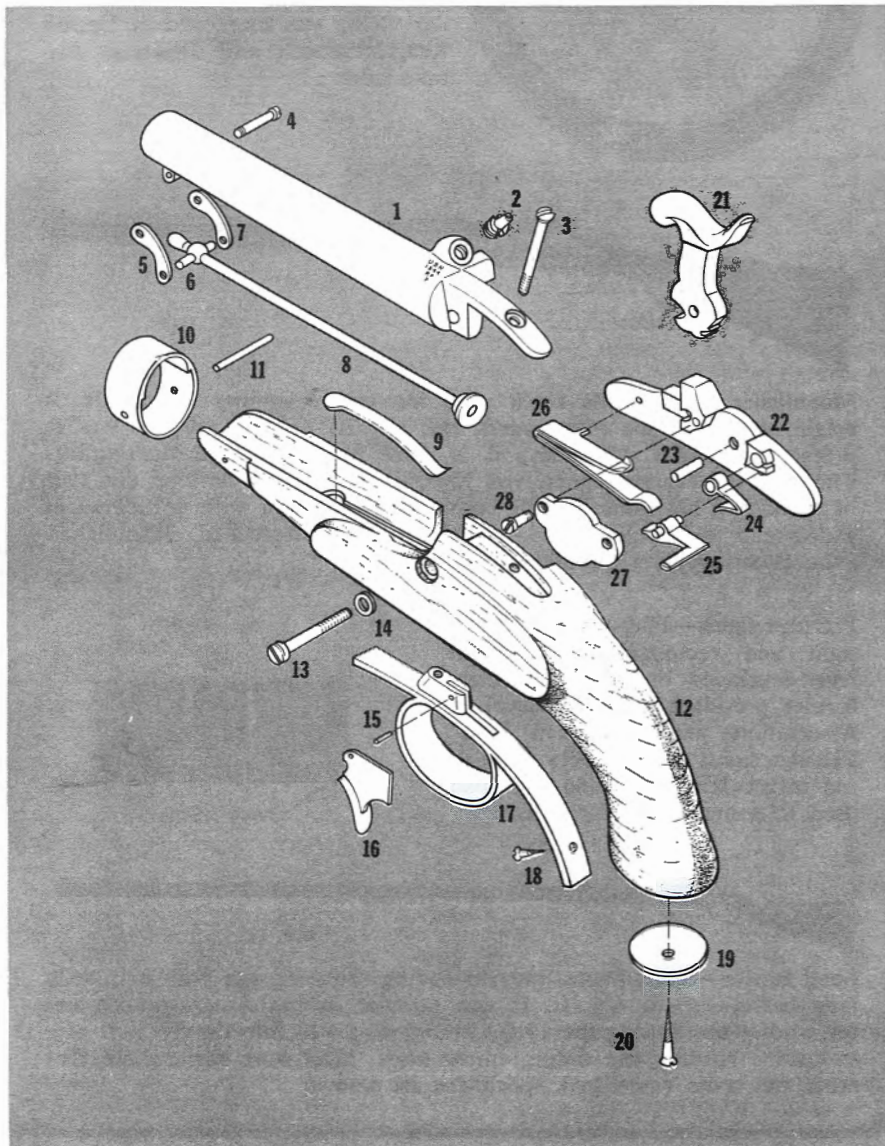
Box-locks or inside-hammer locks are unique as far as U. S. martial pistols

go. The idea of the inside hammer was to prevent it from snagging when a sailor thrust a brace of pistols under his belt. This development resulted in a simplified lock mechanism. Since the hammer was on the inside of the lock, the sear notches could be cut directly into it. This eliminated the tumbler and tumbler screw.

Another advanced feature of the gun was the inclusion of a large hammer stop. This sturdy projection on the inside of the lockplate prevented the hammer from unduly battering the nipple.

The Model 1842 was a handsome gun. All the hardware was brass, the lockplate and the hammer were case-hardened, and the barrel was lacquer-browned. Some were tinned to prevent salt water corrosion.

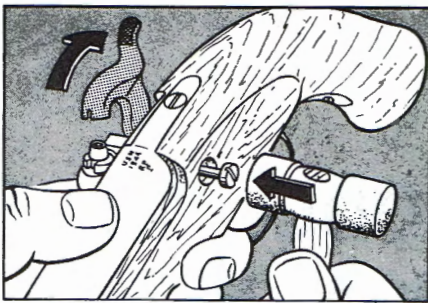
Relatively few Model 1842 pistols were made. It is estimated that the combined production of Ames and Deringer was not over 4000 guns.



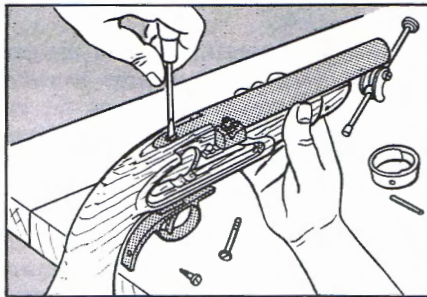
## Parts Legend

1. Barrel
2. Cone
3. Barrel screw
4. Swivel screw
5. Left ramrod swivel
6. Ramrod guide
7. Right ramrod swivel
8. Ramrod
9. Ramrod spring
10. Band
11. Band cross pin
12. Stock
13. Lock retaining screw
14. Washer
15. Trigger pin
16. Trigger
17. Trigger guard
18. Trigger guard screw
19. Butt cap
20. Butt cap screw
21. Hammer
22. Lockplate
23. Hammer pin
24. Sear spring
25. Sear
26. Mainspring
27. Bridle
28. Bridle screws (2)

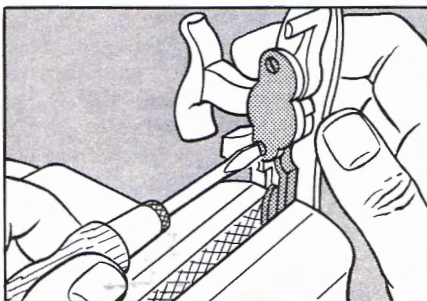




**1** To remove the lockplate, first pull the hammer back to half-cock position to clear the cone (2). Loosen the lock retaining screw (13) a few turns and tap it gently with a plastic hammer. If the lock does not come out easily, tap the lockplate (22) lightly. This will help break the lock loose from rust and grime. Continue to loosen the retaining screw (13) and to tap it until the lock is free of the stock. Never attempt to pry the lockplate loose, as this may scar the stock



**2** After the lock mechanism has been removed, the balance of the gun can be disassembled easily. First pull out the ramrod (8). Drive out the band cross pin (11), and carefully drive off the band (10) with a block of wood or plastic hammer. The barrel screw (3) holds the barrel (1) and the trigger guard (17) together and must be removed completely. Be sure the lock retaining screw is out of the stock, since it, too, retains the barrel



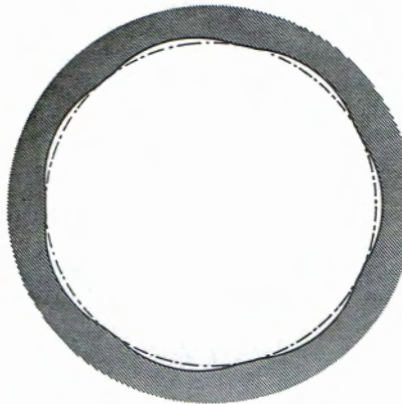
**3** Before attempting to disassemble the lock, treat the screws with a good penetrating solvent. Take the tension off the mainspring (26) with an old spring clamp if one is available. If not, clamp the mainspring (26) in a vise as shown. Squeeze the mainspring just enough to relieve the pressure on the hammer. Remove the bridle screws (28) and lift off the bridle (27). Lift out the hammer (21). The mainspring is now free to pivot until the short end is free of its notch in the lockplate. Ease the mainspring out ■

## Illustrated Definitions

Simple and practical explanations of firearms and shooting terms, given as aids to identification and understanding. The definitions are not, and are not intended to be, technically or legalistically complete



**Rifle-musket**—Military, muzzle-loading, percussion shoulder arm with long barrel, large caliber, and other musket features, except that its bore is rifled instead of smooth and is adapted to conical bullets. Typical example is U. S. Model 1861 Rifle-musket.

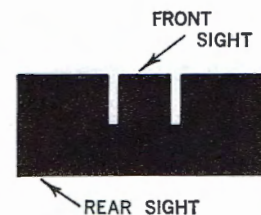


**Metford rifling**—Rifling with shallow, rounded grooves to prevent accumulation of powder fouling, developed in the 1870's by W. E. Metford, a British engineer, and employed in British Service Martini-Metford and Lee-Metford rifles. Similar rifling was employed in Danish Krag-Jorgensen and Japanese Arisaka rifles.



**Mannlicher stock**—Rifle stock with fore-end extending to muzzle. It originated in Europe many years ago, and its original purpose was to protect the barrel. Nowadays it is more for appearance than utility. The Austrian arms designer, von Mannlicher, did not develop this type of stock, but his name became commonly associated with it because of widespread distribution and popularity of full-stocked Mannlicher-Schoenauer sporting carbines.

**Patridge sights**—Flat-top blade front sight and rectangular-notch open rear developed by E. E. Patridge, former president of U. S. Revolver Association, and introduced 1892. Patridge sights are now very popular for target handguns, and are also used to some extent for rifles.



**Long fowler**—Smoothbore, muzzle-loading shoulder gun with extremely long barrel—up to 6½ ft. It was popular in the American colonies for wildfowling during the 17th Century and well into the 18th. It also saw some military use during emergencies. Most long fowlers are flint arms, but some wheel lock specimens are known.



# Walther Model 4

## Exploded views: 7.65 mm



BY E. J. HOFFSCHMIDT  
Completed by Dennis Riordan

THE Carl Walther firm of Zella St. Basii, Germany, was among the earliest automatic pistol makers. They brought out Germany's first .25 cal. automatic pistol in 1908. In 1910 they introduced the .32 cal. Model 3, then, in the same year, enlarged the Model 3 and called it the Model 4.

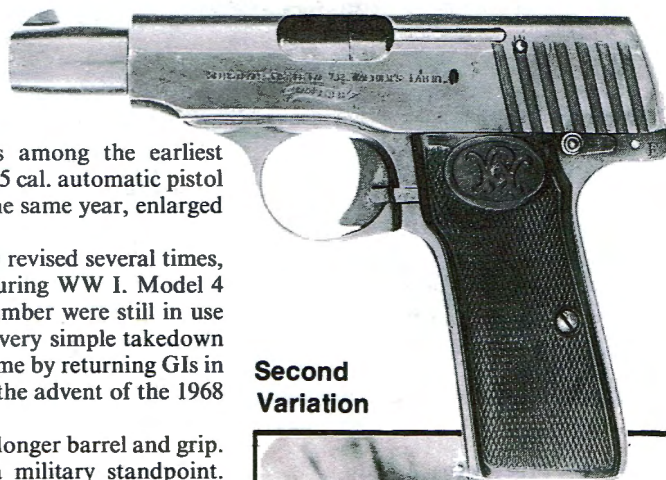
While only in production for about 15 years, the Model 4 was revised several times, and over one hundred thousand were manufactured and used during WW I. Model 4 pistols were well liked by WW I German officers and a great number were still in use during WW II. They were small, well made, reliable, and had a very simple takedown system. Thousands of all versions of the Model 4 were brought home by returning GIs in 1945. Later, more thousands were imported by Interarms before the advent of the 1968 GCA, prohibiting the importation of such pistols.

As stated, the first Model 4 was simply a Model 3 pistol with a longer barrel and grip. The larger size made the pistol much more practical from a military standpoint. Increasing the magazine capacity to eight rounds (plus a round in the chamber) gave the Model 4 a nine-shot capability. Lengthening the barrel resulted in a longer sighting radius.

After the first few hundred guns, the slide was redesigned to simplify the takedown and lighten the pistol. The second version (shown in the exploded view) is probably the most common version of the Model 4. This second mechanical variation went through a bewildering number of different slide markings and minor changes. The shape of the ejection port was changed at various times and at some later date a rear sight was inserted into a dovetail slot cut into the slide.

Extensive military use in WW I pointed up the need for some design changes, so the Model 4 came again to the drawing board for the third and last major alteration. On earlier guns the trigger bar, that connects the trigger to the sear, was simply laid in an open slot milled into the frame. It was exposed to the elements and only retained by the left grip. The last revision of the Model 4 moved that trigger bar inside the frame so that it was no longer exposed. Slide serrations were changed from wide flat grooves to a series of 16 sharp "V" serrations.

The Model 4 was eventually replaced in the Walther line by the more modern designs of the late 1920s and '30s.



Second  
Variation



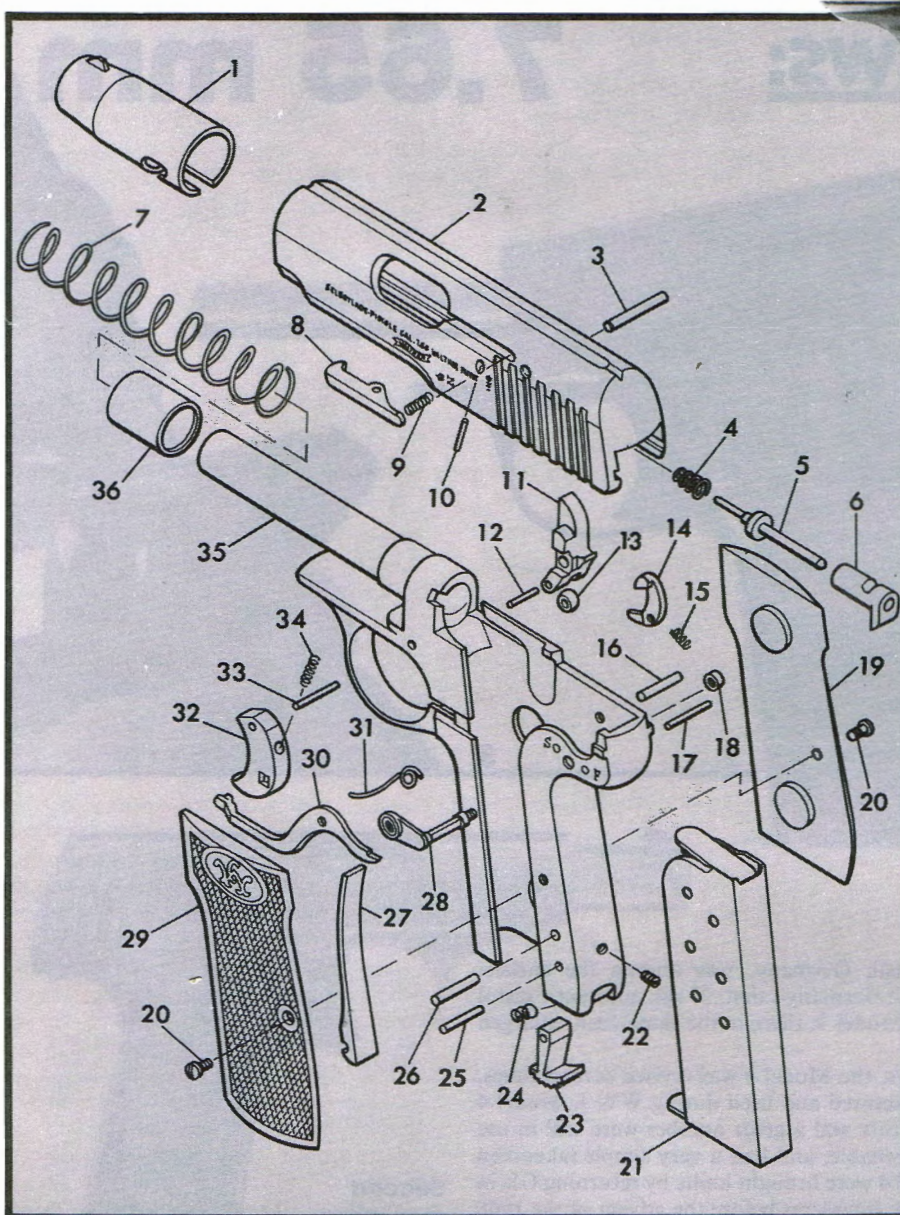




### Third Variation

#### Parts Legend

1. Slide extension
2. Slide
3. Firing pin retainer
4. Firing pin spring
5. Firing pin
6. Firing pin extension
7. Recoil spring
8. Extractor
9. Extractor spring
10. Extractor pin
11. Hammer
12. Hammer roller pin
13. Hammer roller
14. Sear
15. Sear spring
16. Hammer pin
17. Sear pin
18. Safety catch nut
19. Right grip
20. Grip screw (2)
21. Magazine
22. Mainspring retainer screw
23. Magazine catch
24. Magazine catch spring
25. Magazine catch pin
26. Mainspring pin
27. Mainspring
28. Safety catch
29. Left grip
30. Trigger bar
31. Trigger bar spring
32. Trigger
33. Trigger pin
34. Trigger spring
35. Barrel/frame
36. Recoil spring bushing



#### Disassembly Procedure

1. Depress the magazine catch (23) and withdraw the magazine (21). Retract the slide (2) and check to be sure that the chamber is empty. Holding the grip in one hand, with the other push in the slide extension (1), turn it counter-clockwise to its limit, when viewed from the muzzle end, and allow it to ride forward out of the slide under spring pressure. Remove it, the recoil spring (7) and the recoil spring bushing (36).

2. The slide (2) can now be drawn fully back, its rear lifted up, and the unit easily pushed forward off the barrel (35).

3. With a small drift punch on an angle, drive the extractor pin (10) down from the top of the slide

(2) through its oval hole in the left side of the slide. A larger punch can be used to drive out the firing pin retainer (3) from left to right. This frees the firing pin (5), its spring (4), and extension (6).

4. Lower the internal hammer (11) by turning the safety (28) to its forward position, placing the thumb on the hammer to cushion its fall, and pulling the trigger (32). Remove the grip screws (20) and grips (19 & 29). This exposes most working parts and allows the manual depression of the trigger bar spring (31), freeing it from its notch in the bottom of the trigger bar (30) which may now be lifted from its recess in the trigger (32).

5. If further disassembly is required, loosen the mainspring re-

tainer screw (22) and, holding the frame in a padded vise or on a soft wooden block, drive out the magazine catch pin (25) to remove the magazine catch (23) and its spring (24). The mainspring pin (26) and mainspring (27) can be similarly removed and, with a sturdy punch of the correct diameter and the safety (28) in 7 o'clock position, the hammer pin (16) can be drifted out, freeing the hammer (11) with its roller (13) and roller pin (12), the trigger bar spring (31), and safety (28). Drifting out the trigger pin (33) will free the trigger (32) and its spring (34). Removal of the sear pin (17) frees the sear (14) and its spring (15) and completes disassembly. Reverse procedure for reassembly.





# Exploded views:

BY EDWARD J. HOFFSCHMIDT

Completed by Dennis Riordan

## Walther Model 6 9 mm Pistol

WHEN Germany entered WWI, there was a critical need for military pistols. Walther's Models 1, 2, 3, 4 and 5 were pressed into service, but these pistols were in either .25 or .32 cal., not the standard 9 mm military caliber.

In an effort to supply a 9 mm Luger cal. pistol that could be produced faster than the Luger PO8 or the Mauser military pistol in 9 mm, Walther developed the Model 6. Basically, it was an overgrown Model 4. The barrel was longer, 4-<sup>13</sup>/<sub>16</sub>" to be exact; the grip was longer by about one inch and the slide was lengthened by 2<sup>3</sup>/<sub>8</sub>" to add more mass.

The Model 6 is a "blowback" operated pistol. The German description is more explicit; they call this mechanically unlocked system "mass-locked." The system differs from the locked breech systems, found on the Colt M1911, Luger, Mauser Model 1896 or the P38. On the Model 6, a heavy slide and a stiff spring compensate for the lack of a breech lock.

In order to shoot the Model 6, a loaded magazine is inserted into the butt. The slide is then drawn back and released. The heavy slide with its powerful return spring chambers the first round, thereby possibly creating a problem. Model 6 chambers seem to be very tight and the heavy slide may "press-fit" the first round into the chamber. Since the blowback design does not provide for any primary extraction, almost nothing short of firing the round or pushing it out with a rod will extract it. This defect may account for the Model 6 never having been officially adopted by the German army.

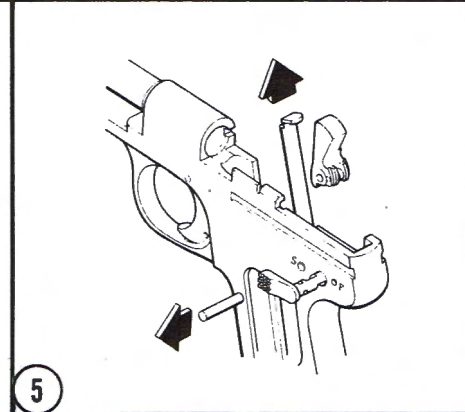
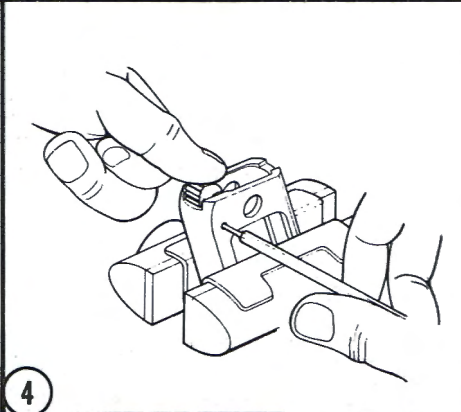
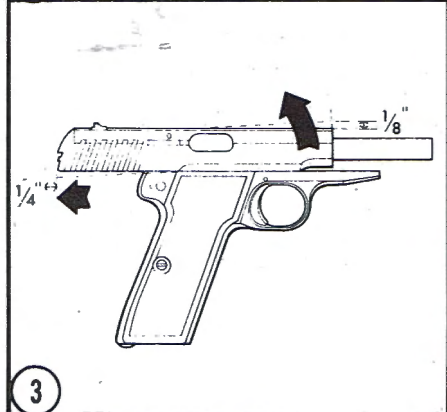
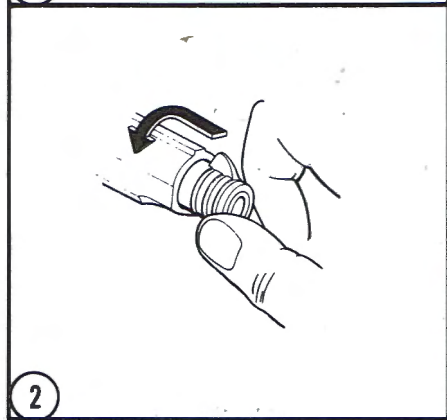
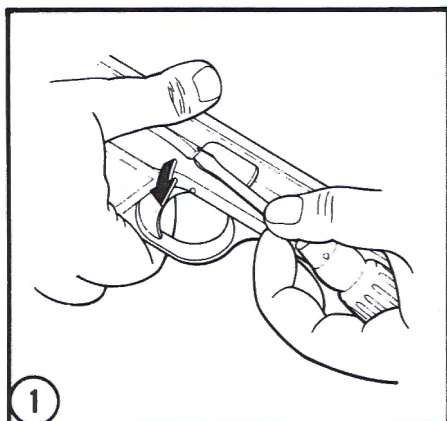
The Walther Model 6 was only made from 1915 to the end of the war,

and from the serial number range it appears that less than two thousand were made. Apparently, some pistols were exported after WWI because many of the known specimens have "Germany" stamped on the lower left hand of the slide.

On the left side the slide is marked Selbstlade-Pistole Cal. 9M/M, Walther's patent. Selbstlade-Pistole means self-loading pistol in English. The right hand side of the slide is marked Carl Walther, Waffenfabrik, Zella St. Bl. (the town of Zella St. Blasii). Proof marks are found on the right side of the frame, near the end of the barrel support, close to the trigger pin and near the muzzle on the right side of the barrel. The serial number is found at the juncture of the trigger guard and frame. The last three digits of the serial number were also stamped inside the slide just behind the firing pin.

### Disassembly Instructions

**1. Warning:** Since the Model 6 chambers are very tight, some brands of 9 mm cartridges may stick in the chamber, making it extremely difficult to open the slide. In this case, remove magazine (23), apply safety catch (26), insert a screwdriver tip beneath lip of extractor (5), and pry extractor outward to free it from the chambered round. Then the slide can be retracted and the round





removed safely with a cleaning rod.

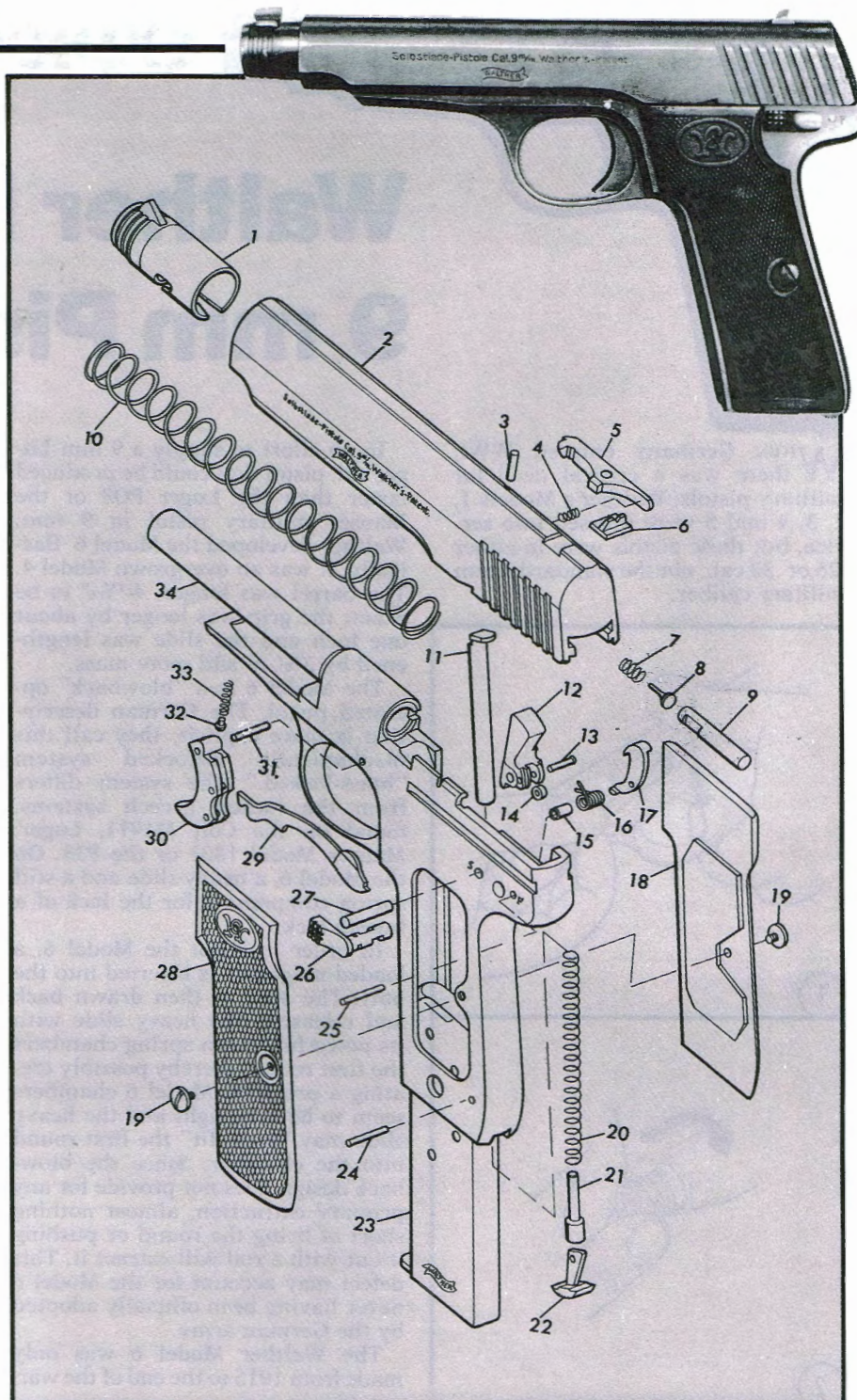
2. To field strip the pistol, depress magazine catch (22) and remove the magazine (23); then clear the chamber, allowing the slide (2) to close. Holding the gun in the left hand, push the slide extension (1)  $\frac{1}{8}$  inch into the slide, and turn it 20 degrees counterclockwise. Ease out slide extension and recoil spring (10). (In reassembly, line up the mark on the slide extension with the middle of the slide, push extension in and turn clockwise to lock.)

3. Pull the slide rearward until it stops. Lift its forward end  $\frac{1}{8}$ " and move the slide another  $\frac{1}{4}$ " further to the rear, freeing it from its twin grooves in the frame (34). Now lift the rear of the slide and strip it from the frame by drawing it forward, over the barrel.

4. Remove the grip screws (19) and grips (18 & 28). Pull the trigger (30) while easing hammer (12) forward with thumb. Hold frame in a soft-jawed vise and drive out the magazine catch pin (24). As the magazine catch is under heavy spring pressure, press it downward, into the frame while removing pin punch, and grasp it firmly as it is eased out of the grip. Drive out sear pin (25) and remove sear (17), sear spring (16), and sear spring bushing (15).

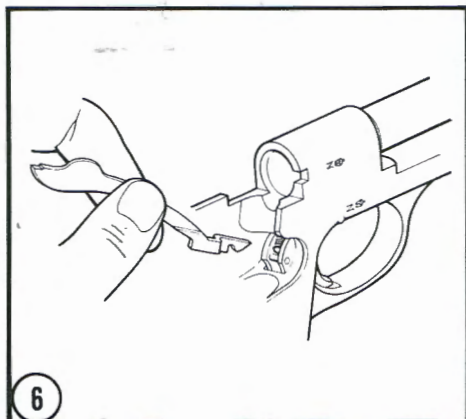
5. The hammer pin (27) is tight, but it can be driven out. If an arbor press is not available, use a punch of almost the same diameter and a few drops of penetrating oil. Remove hammer (12), mainspring (20), and mainspring tube (11). Then the safety catch will come out easily.

6. Drive out trigger pin (31) and move trigger rearward; then pull trigger bar (29) straight out against pressure of trigger spring (33). Replace by easing the point of the trigger bar into the trigger slot, between the trigger spring plunger (32) and the fixed trigger cross pin. Then push forward until it snaps into place. Reassemble in reverse order.



#### Parts Legend

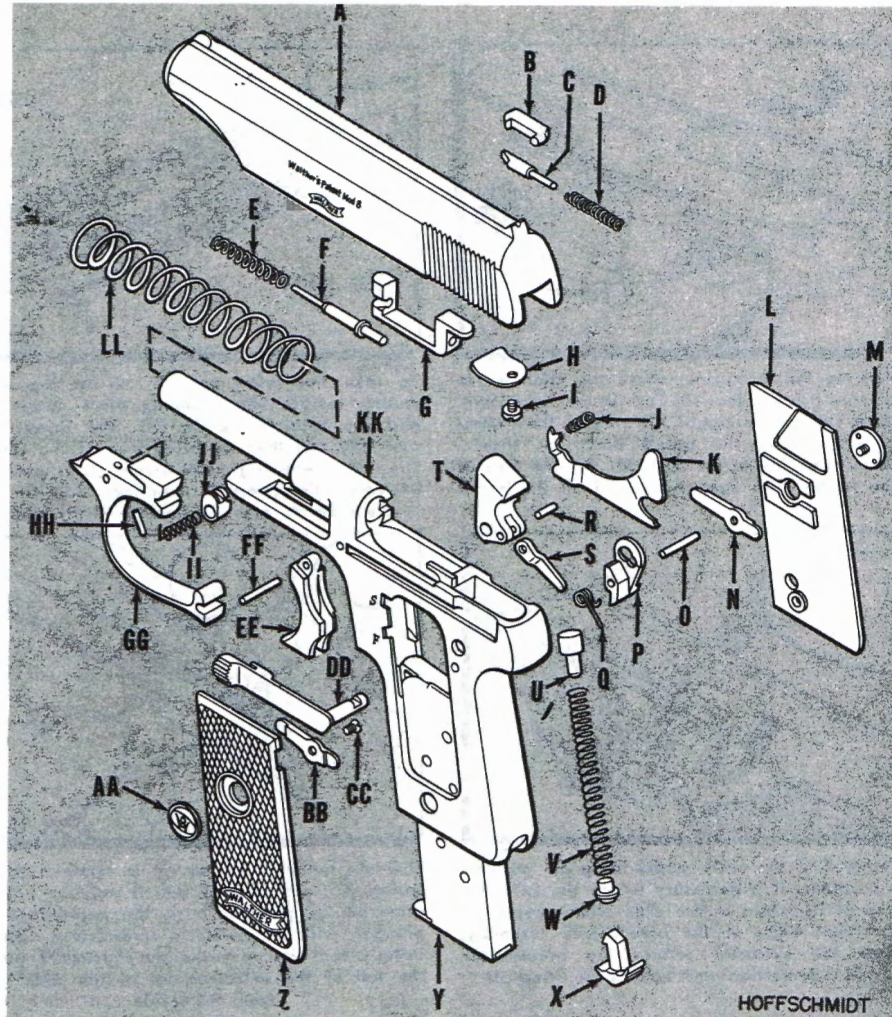
- |                         |                         |                            |
|-------------------------|-------------------------|----------------------------|
| 1. Slide extension      | 13. Hammer roller pin   | 25. Sear pin               |
| 2. Slide                | 14. Hammer roller       | 26. Safety catch           |
| 3. Extractor pin        | 15. Sear spring bushing | 27. Hammer pin             |
| 4. Extractor spring     | 16. Sear spring         | 28. Left grip              |
| 5. Extractor            | 17. Sear                | 29. Trigger bar            |
| 6. Rear sight           | 18. Right grip          | 30. Trigger                |
| 7. Firing pin spring    | 19. Grip screw (2)      | 31. Trigger pin            |
| 8. Firing pin           | 20. Mainspring          | 32. Trigger spring plunger |
| 9. Firing pin extension | 21. Mainspring plunger  | 33. Trigger spring         |
| 10. Recoil spring       | 22. Magazine catch      | 34. Barrel/frame           |
| 11. Mainspring tube     | 23. Magazine            |                            |
| 12. Hammer              | 24. Magazine catch pin  |                            |





## LEGEND

- A—Slide
- B—Extractor
- C—Extractor plunger
- D—Extractor spring
- E—Firing pin spring
- F—Firing pin
- G—Firing pin housing
- H—Retaining plate
- I—Retaining plate screw
- J—Trigger bar spring
- K—Trigger bar
- L—Right-hand grip
- M—Right-hand grip screw
- N—Right-hand grip retainer
- O—Sear pin
- P—Sear
- Q—Sear spring
- R—Hammer strut pin
- S—Hammer strut
- T—Hammer
- U—Mainspring plunger
- V—Mainspring
- W—Magazine latch plunger
- X—Magazine latch
- Y—Magazine
- Z—Left-hand grip
- AA—Left-hand grip nut
- BB—Left-hand grip retainer
- CC—Left-hand grip screw
- DD—Safety catch
- EE—Trigger
- FF—Trigger pin
- GG—Trigger guard
- HH—'Takedown' latch pin
- II—'Takedown' latch spring
- JJ—'Takedown' latch
- KK—Receiver and barrel assembly
- LL—Recoil spring



# Walther Model 8

By E. J. Hoffschmidt

**T**HERE was a time during the 1920's when most central European businessmen carried a .25 caliber automatic pistol. Europe was in the clutches of a depression and a compact handgun often came in handy for defense purposes.

Many German gunsmiths, to stay in business, turned to these popular inexpensive pistols. They stopped building fancy Drillings and expensive Mausers,

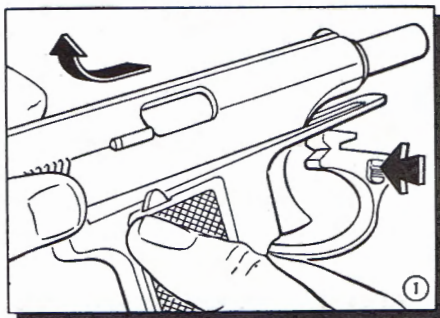
and concentrated on a bewildering assortment of vest pocket pistols.

The Walther Model 8 was first marketed in 1920. Yet, in spite of being introduced in the midst of a depression, it caught on almost immediately, and by 1939 more than 200,000 had been sold. Stoeger sold them in America until World War II cut off the supply. The price ranged from \$25 for the standard version and up to \$92.50 for an engraved, gold-plated model in a presentation case.

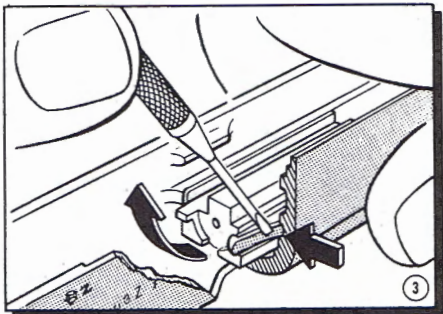
When compared with later Walther

pistols, such as the PP or PPK, the Model 8 contains nothing very startling in the way of mechanisms. Its popularity was due chiefly to its clean, compact design, to say nothing of the flawless workmanship evident on all pre-war Walther products. The gun is large enough to afford an adequate grip and has a nine-shot capacity, carrying eight in the magazine and one in the chamber. The Model 8 might be called a medium-sized .25 automatic, for while it is smaller than the Mauser Pocket Model .25 caliber, it is larger than the

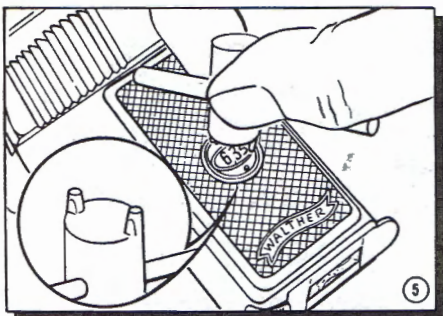




Remove the magazine, check the chamber to be sure it is not loaded. Push in the 'takedown' latch (JJ) on the right-hand side of the trigger guard, pulling the guard down as shown. Draw the slide to the rear, lift the end free of the frame, then ease it forward off the barrel.



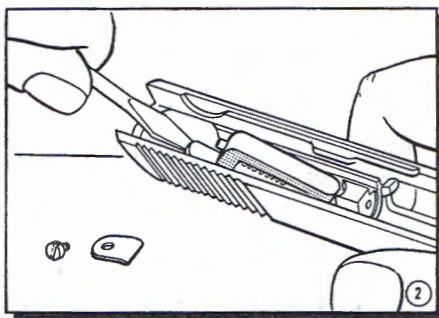
Removal of the early model firing pin presents a problem. It is necessary to pry the extractor free of its recess in the slide while prying up the front edge of the breechblock assembly, since the extractor retains the breechblock and a projection on it retains the firing pin.



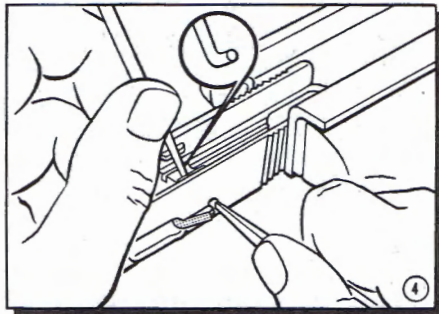
Unless a tool similar to the one shown is made, it is difficult to remove the blue medallion (grip screw, M) without damaging it. With this screw out, lift off the right-hand grip (L), remove the magazine (Y), and unscrew the left grip screw from the inside.

average vest pocket .25 automatic.

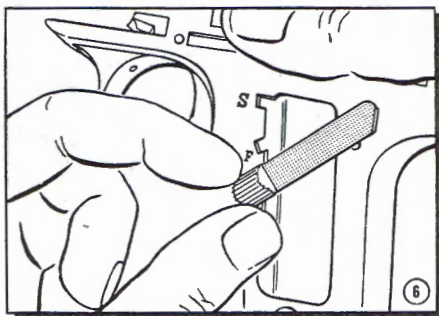
As in other Walther pistols, internal design changes were made without much fanfare, since at least two definite variations of the Model 8 are to be found. In the original Model 8 pistol, it was possible to pry the entire breechblock assembly out of its seat in the slide. This assembly carried the firing pin, firing pin spring, and extractor. The extractor tail acted as a firing pin retainer, and the extractor as a breechblock latch. While this system was simple, it had a tendency to loosen up



To take the firing pin (F) out of the late model, remove the retaining plate screw (I) and the retaining plate (H). The firing pin assembly can then be pried free of the slide. Since the retaining plate screw (I) is usually extremely tight, your screwdriver must fit the screw slot to prevent damage to the head.



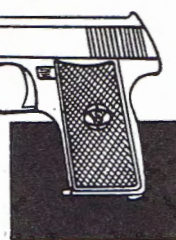
The late model extractor (B) is retained by a spring (D) and plunger (C). It may be easily removed by pushing back the spring-loaded plunger with a jeweler's screwdriver. Then, using a tool similar to the one illustrated, push the tail of the extractor out of the slide (A) from the inside.



In order to remove the safety catch (DD), the grips must be removed. Next, ease the internal hammer (T) to the fired position. Press the safety in toward the receiver out of engagement with the notches, and revolve it to the position shown. Now it can be lifted free of the receiver.

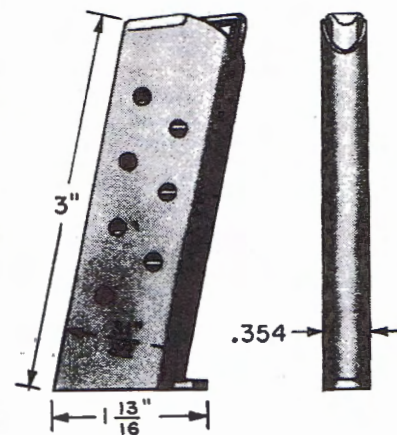
after prolonged use. There is no record of when the gun was revised but the internal mechanism of the slide was changed a great deal. For one thing the breech face on the later model is an integral part of the slide. A firing pin housing is retained by a screw and plate. The extractor was moved into the slide similarly to the PP and PPK. But the rest of the gun was left unchanged, so if you want a Model 8 for protection, get the late model, since it is more rugged and easier to clean and repair.

Walther Model 8  
.25 Cal. Auto

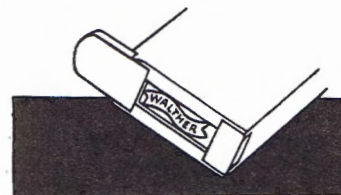


## PISTOL MAGAZINES

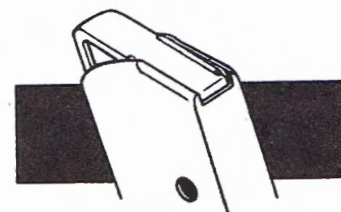
One of a series



Should you find a magazine stamped Walther, that looks long enough to fit a .32 automatic but rattles around in a .32 frame, chances are you have a magazine for the .25 cal. Walther Model 8. This trim little pistol was very popular in Europe, and many Service pistol matches abroad have been won with it. As .25 cal. automatics run, the Model 8 is rather large, but this is not a serious drawback, since it gives the gun an excellent grip and a 9-round capacity. Like other pre-war Walther pistols, the Model 8's are beautifully finished and made of the best steels.



The unique method of inserting the Walther trademark into the magazine floor plate is characteristic of the Model 8. Its long, thin outline also sets it apart from the vast majority of other .25 automatic pistol magazines.



There is nothing especially distinctive about the follower or magazine lips of the Model 8, but some followers will be found with small raised ridges, as shown. Others will be found with plain flat followers.—E. J. HOFFSCHMIDT.





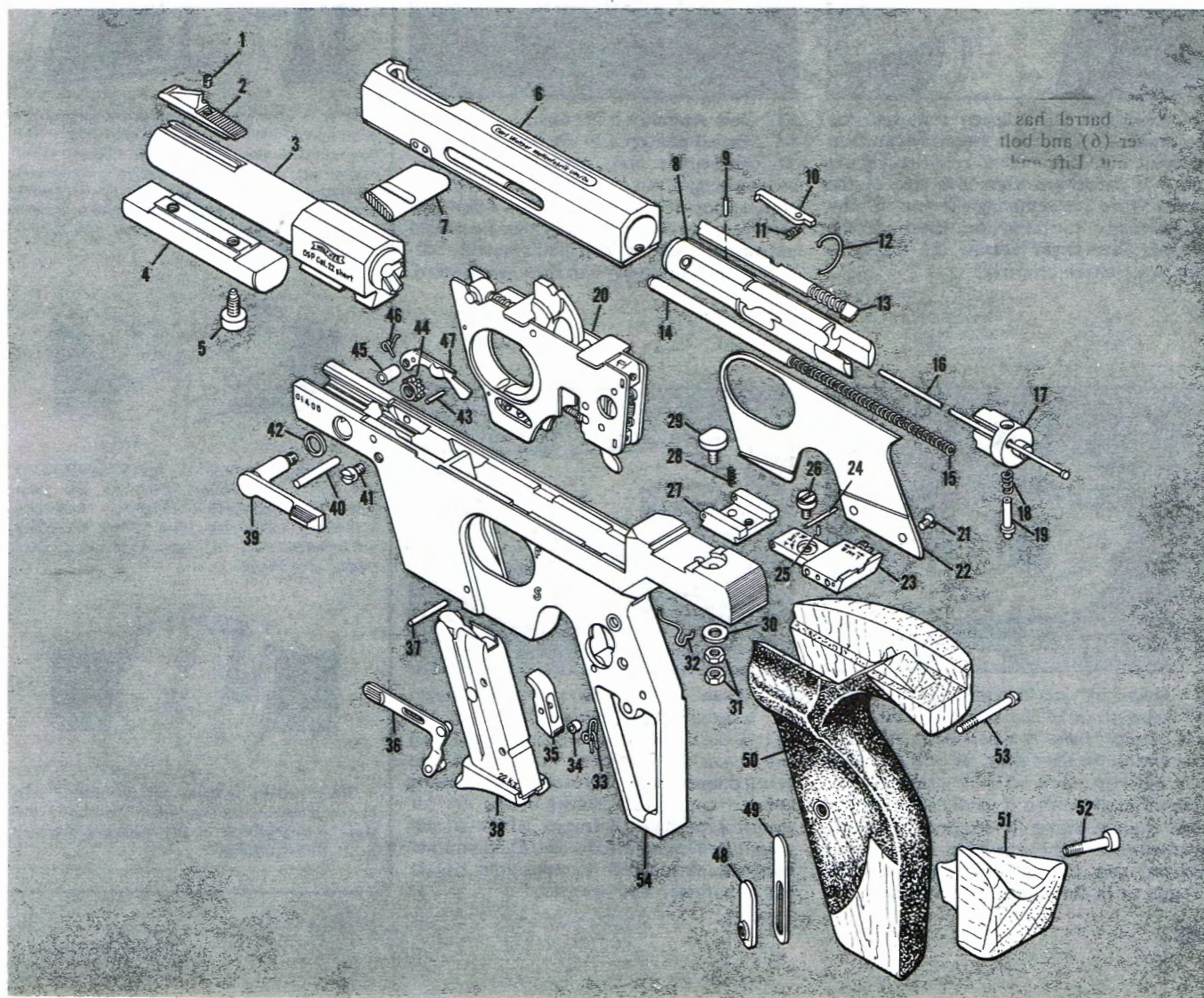
By E. J. HOFFSCHMIDT

# Walther Olympia Rapid-Fire Pistol

**B**EFORE World War II, the firm of Carl Walther of Zella-Mehlis, Germany, was foremost in the design and manufacture of Olympic-type rapid-fire pistols. After the war, the factory was taken over by the Russians and Walther then opened a new plant in Ulm/Donau, West Germany. By 1958 a new rapid-fire pistol had been designed and a limited number made for test. Production began in earnest only recently.

## Parts Legend

- |                         |                              |                            |                            |
|-------------------------|------------------------------|----------------------------|----------------------------|
| 1. Sight lock screw     | 13. Firing pin and spring    | 27. Rear sight base        | 41. Barrel lock stop screw |
| 2. Front sight          | 14. Recoil spring housing    | 28. Rear sight spring      | 42. Barrel lock bushing    |
| 3. Barrel               | 15. Recoil spring            | 29. Sight retainer screw   | 43. Lock nut pin           |
| 4. Weight               | 16. Recoil spring guide      | 30. Washer                 | 44. Lock nut               |
| 5. Weight screw (2)     | 17. Bolt stop                | 31. Sight retainer nuts    | 45. Spacer                 |
| 6. Receiver             | 18. Plunger spring           | 32. Safety catch spring    | 46. Hold-open latch spring |
| 7. Cocking piece        | 19. Stop retaining plunger   | 33. Magazine catch spring  | 47. Hold-open latch        |
| 8. Bolt                 | 20. Trigger assembly         | 34. Magazine catch bushing | 48. Adjusting screw nut    |
| 9. Extractor pin        | 21. Side plate screw         | 35. Magazine catch         | 49. Slide plate            |
| 10. Extractor           | 22. Side plate               | 36. Safety catch           | 50. Grip                   |
| 11. Extractor spring    | 23. Rear sight leaf assembly | 37. Magazine catch pin     | 51. Palm rest              |
| 12. Firing pin retainer | 24. Sight leaf pin           | 38. Magazine               | 52. Adjusting screw        |
|                         | 25. Click pin                | 39. Barrel lock            | 53. Grip screw             |
|                         | 26. Sight elevation screw    | 40. Hold-open latch pin    | 54. Frame                  |

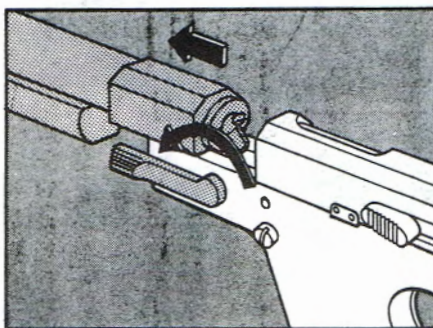




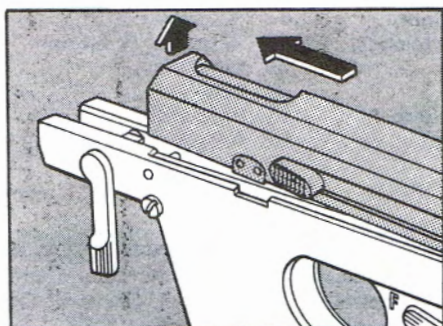
Despite its unorthodox outline, handling qualities of the Walther rapid-fire pistol are excellent. Its mechanism is similar in some respects to a blowback-operated .22 semi-automatic rifle in that the bolt operates inside the receiver to give an unbroken, stationary line of sight. There is no recoiling slide.

The rear sight is fully adjustable. Takedown is simple and the barrel can be quickly detached for cleaning. The fully adjustable trigger mechanism seats down inside the light alloy frame and can be easily removed as a unit. It consists of a sheet-metal housing containing the hammer, sear, and trigger.

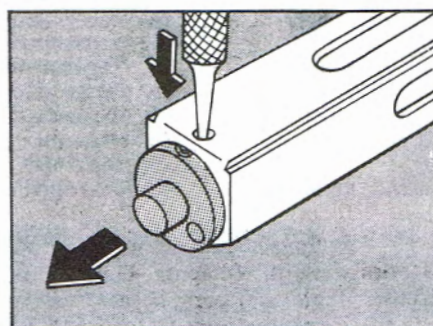
The Walther rapid-fire pistol is an expensive, well-designed arm made for a specialized sport. It is not intended for the casual target shooter or plinker.



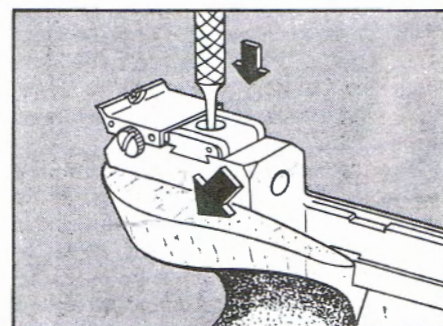
**1** To disassemble pistol, first remove magazine (38) and clear chamber. Then pull trigger to drop hammer, since gun must not be cocked when disassembled. Rotate barrel lock (39) forward until it is horizontal as shown. Then pull barrel forward off frame (54). If lock is not horizontal, barrel (3) cannot be removed.



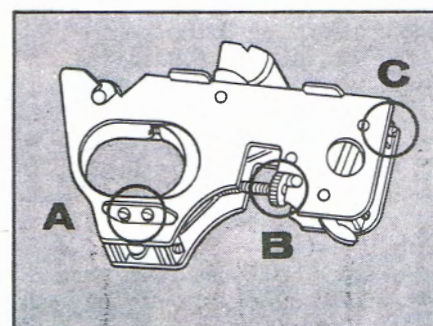
**2** After barrel has been removed, receiver (6) and bolt assembly can then be lifted out. Lift end of receiver slightly and pull it forward until it is free of the frame. When reassembling the gun, it may be necessary to push the front of the receiver down tight against the frame to help seat barrel properly.



**3** Bolt assembly is retained by a spring-loaded plunger (19) in bolt stop (17). To disassemble bolt, push in on plunger as shown and remove bolt stop. When recoil spring (15) and guide (16) are removed, cocking piece (7) can be pulled out through side of bolt and receiver. Balance of bolt assembly can then be removed.



**4** Grip (50) is a one-piece wrap-around type made of European walnut. Due to its design, there is a possibility that grip may shrink on the frame. To remove grip, take out grip screw (53). If grip does not slide off easily, strike it gently with heel of hand at point shown. If this does not work, remove rear sight elevation screw (26) and tap grip lightly with a punch small enough to fit through hole in frame.



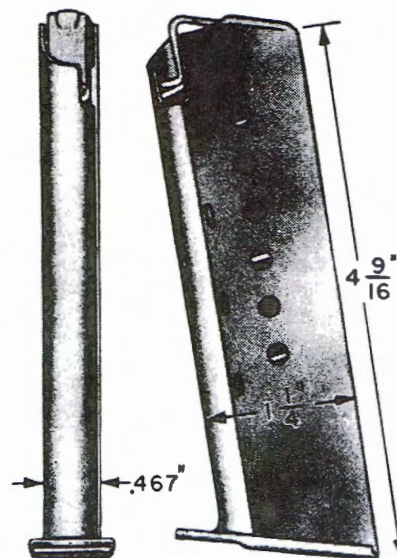
**5** When receiver is removed, trigger assembly (20) can be lifted out. To free it, push it up from inside trigger guard and lift it by hammer. Trigger pull can be lightened or increased by turning knurled nut at (B). Screws at (A) are for adjusting position of trigger within trigger guard. Red-colored screw at (C) should not normally be touched. It repositions trigger bar if hammer fails to catch.



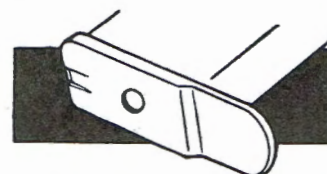
Walther P38  
9 mm. Auto

## PISTOL MAGAZINES

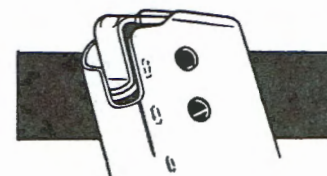
One of a series



In spite of the poor finish and sloppy workmanship on many souvenir Walther P38's, the gun remains one of the best military automatics yet produced. The design incorporates numerous interesting features. It is double action; it has a cartridge indicator to show whether the chamber is loaded; and it has a simple takedown.



P38 magazines can be easily identified by the row of weld marks along the left front side. The push-button removable floorplate is another identifying mark. Early magazines are marked P38, but late models are often found unmarked.

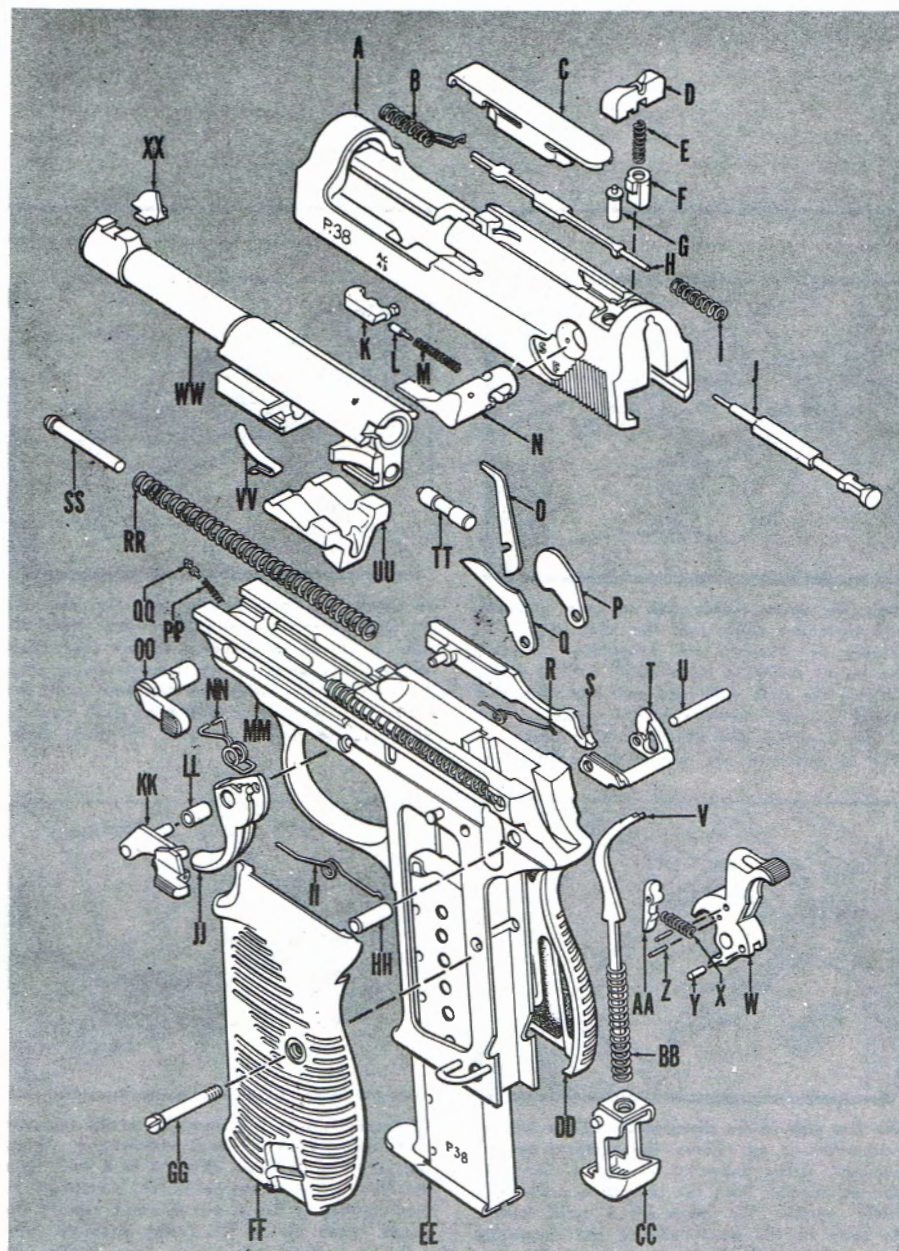


Other striking features are the double step in the magazine follower, and the cut in the side for engagement of the hold-open lever.—  
E. J. HOFFSCHMIDT



## Legend

- |                                    |                                  |
|------------------------------------|----------------------------------|
| A—Slide                            | AA—Hammer Lever                  |
| B—Firing Pin Spring                | BB—Hammer Spring                 |
| C—Firing Pin and Indicator Cover   | CC—Magazine Catch                |
| D—Rear Sight                       | DD—Right Hand Grip               |
| E—Automatic Firing Pin Lock Spring | EE—Magazine                      |
| F—Automatic Firing Pin Lock        | FF—Left Hand Grip                |
| G—Firing Pin Retainer Pin          | GG—Grip Screw                    |
| H—Cartridge Indicator Pin          | HH—Hammer Pin                    |
| I—Cartridge Indicator Spring       | II—Slide Stop Return Spring      |
| J—Firing Pin                       | JJ—Trigger                       |
| K—Extractor                        | KK—Slide Stop                    |
| L—Extractor Plunger                | LL—Trigger Bushing               |
| M—Extractor Plunger Spring         | MM—Frame (Receiver)              |
| N—Safety Catch                     | NN—Trigger Spring                |
| O—Ejector                          | OO—Barrel Retaining Latch        |
| P—Firing Pin Lock, Lifter          | PP—Retainer Latch                |
| Q—Safety Hammer Lowering Lever     | QQ—Retainer Latch Plunger Spring |
| R—Trigger Bar Spring               | RR—Recoil Spring                 |
| S—Trigger Bar                      | SS—Recoil Spring Guide           |
| T—Sear                             | TT—Locking Block                 |
| U—Sear Pin                         | UU—Locking Block Operating Pin   |
| V—Hammer Strut                     | VV—Locking Block Retainer Spring |
| W—Hammer                           | WW—Barrel                        |
| X—Hammer Lever Spring              | XX—Front Sight                   |
| Y—Strut Axle Pin                   |                                  |
| Z—Hammer Lever Pins                |                                  |



By E. J. Hoffschmidt



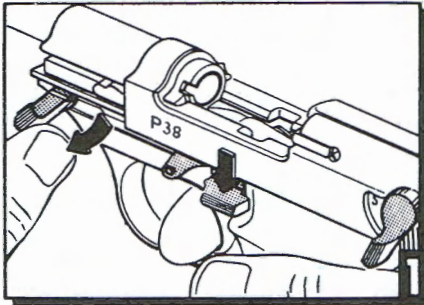
# WALTHER

## P-38

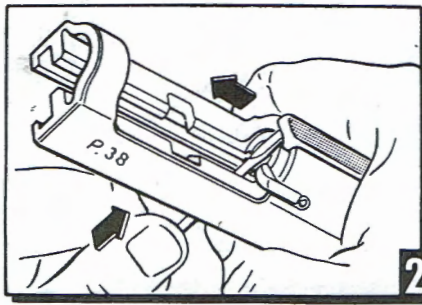
**D**URING the 1930's, Germany began a modernization program designed to give their military machine the finest possible tools of war. This extensive program brought forth the famous 88-mm. AA gun, the Schmeisser MP38, and the MG34. Probably one of the best known of the fine weapons developed during this period is the P38 automatic pistol.

The Karl Walther firm of Zella-Mehlis in Thuringen was given the task of designing a new automatic pistol. The high command wanted a gun that would overcome the weaknesses of the Luger pistol 08. The model HP (Heeres Pistol), brought out in 1937, was the result of this effort. By 1938, the Model HP had been very slightly modified and accepted by the German army. Its official designation was now P38. This gave Germany one of the

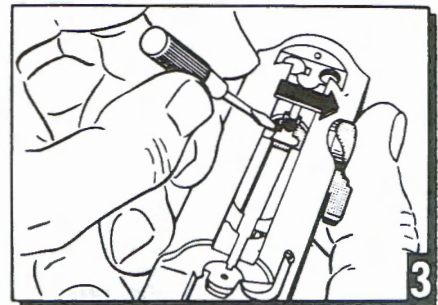




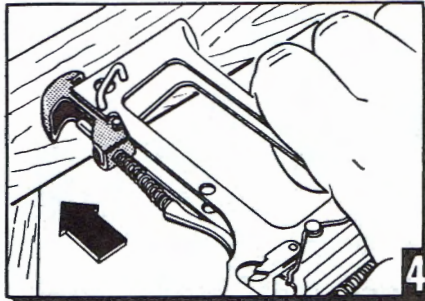
Push the safety catch (N) to safe position. Pull back the slide until the slide stop (KK) retains it. Remove the magazine. Revolve the barrel retaining latch (OO) until it stops. Release the slide stop and pull the slide and barrel assembly forward, off the receiver. Push in the exposed end of the locking block pin (TT) to separate the barrel from the slide



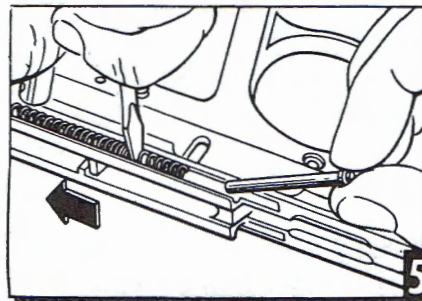
To check the firing pin (J) and the indicator pin (H), the cover must be removed. Hold the slide as shown to prevent the rear sight from falling out. Using a small screwdriver, push the indicator pin inside the slide and insert the blade as shown. A simultaneous push upward and forward will free cover (C) from slide



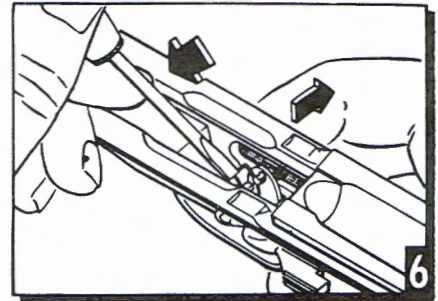
Remove automatic firing pin lock spring and lock (E and F), firing pin retainer pin (G), and indicator pin and spring (H and I). Safety catch must be in fire position before pushing out firing pin. With safety catch between safe and fire, pry out with screwdriver, as shown



The first step in the disassembly of the trigger mechanism is to relieve the tension on the hammer. After removing the grips, hold the gun as shown. Push the magazine catch (CC) firmly against the edge of a solid bench. As soon as the pivot pin on the magazine catch is free of the frame, ease up on the pressure and remove the catch and hammer spring



The recoil spring (RR) may be easily removed with the aid of a small screwdriver. Insert the screwdriver blade about 6 to 8 coils from the front of the spring guide (SS). Compress the recoil spring as far as possible and remove the guide. Ease up on the spring pressure carefully to prevent the spring from flying out



The trigger bar (S) is retained by the pressure of the trigger spring (NN) on a small notch in the portion of the bar that engages in the trigger. Use a small screwdriver to hold the trigger spring out of the notch as shown. Pry the trigger bar free with the other hand while the spring is held back

most modern automatic pistols in existence, to date.

Needless to say, the pre-war Walther HP and P38 pistols were manufactured and finished to the highest shop standards. This is not true of P38's produced later during war time. Inferior materials, shoddy workmanship, and sabotage by the slave labor made some of the pistols produced during 1944 and 1945 dangerous to use.

When the P38 is loaded with eight 9-mm. Luger cartridges in the magazine, plus one in the chamber, it is a formidable handgun. The over-all length of 8½ inches and a weight of 32 ounces gives the gun the feel and instinctive pointing qualities of the Luger pistol, which it resembles.

The P38 is a locked-action, recoil-operated pistol. At the moment of firing, the barrel and slide are locked to-

gether. As they are pushed rearward by the recoil, the end of the locking-block operating pin (TT) strikes the face of the receiver, camming the locking block out of its recesses in the slide. The slide now continues rearward, ejecting the empty case and cocking the hammer for the next shot. The slide is then returned by the recoil springs (RR), pushing a loaded cartridge from the magazine into the chamber.

It is interesting to note that U. S. technical manuals on the German army printed as late as December 1941 make no mention of the gun. Yet, Stoegers, in their 1939 catalog, had the HP Army pistol listed for \$75.00 in 9 mm. caliber and .38 ACP and .45 ACP for ten percent higher.

Much caustic criticism has been heaped on the P38 by those who dislike stampings. They forget that the

P38 was designed from a production point of view. A stamped part, when properly designed and heat-treated, will do the job just as well as a part machined from bar stock, and do it for less cost. Another sore spot is the use of spring wire in place of flat, machined springs. Again, the keynote was on production. The wire springs used in the P38 mechanism are the same grade of steel and work on much the same principle as the commonly accepted coil springs used to operate hammer and recoil mechanisms.

*Manufacture of the P38 was resumed in 1957 at Walther's new plant in Ulm/Donau, West Germany. The new version is mechanically similar to the wartime P38, but has a lightweight alloy receiver to reduce weight.* ■



# WALTHER MODEL PP .22 CAL. PISTOL



## LEGEND

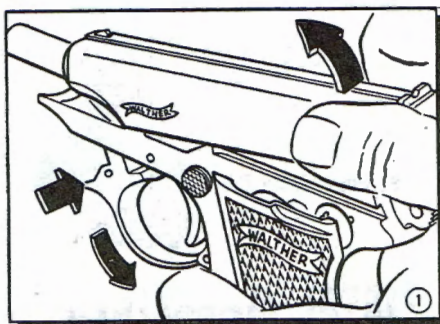
- |                         |                           |
|-------------------------|---------------------------|
| 1. Slide                | 22. Trigger guard plunger |
| 2. Extractor            | 23. Trigger guard spring  |
| 3. Extractor plunger    | 24. Trigger guard pin     |
| 4. Extractor spring     | 25. Magazine catch spring |
| 5. Safety catch plunger | 26. Magazine catch        |
| 6. Rear sight           | 27. Trigger pin           |
| 7. Firing pin spring    | 28. Trigger               |
| 8. Firing pin           | 29. Trigger spring        |
| 9. Right-hand grip      | 30. Ejector               |
| 10. Grip screw          | 31. Ejector spring        |
| 11. Sear pin            | 32. Hammer pin            |
| 12. Hammer              | 33. Left-hand grip        |
| 13. Sear spring         | 34. Magazine              |
| 14. Hammer strut pin    | 35. Recoil spring         |
| 15. Sear                | 36. Safety catch          |
| 16. Hammer strut        | 37. Hammer release        |
| 17. Hammer spring       | 38. Hammer block plunger  |
| 18. Hammer spring plug  | 39. Trigger bar           |
| 19. Frame               | 40. Cocking piece         |
| 20. Spring plug pin     | 41. Hammer block spring   |
| 21. Trigger guard       | 42. Hammer block          |

By E. J. Hoffschmidt

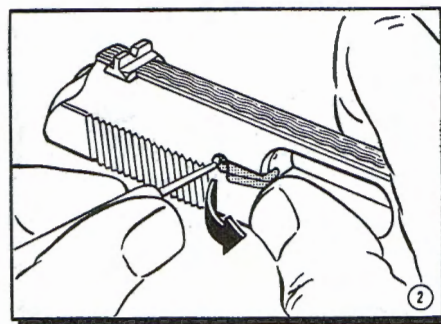
Most GI's who spent some time in Europe during World War II came home with one or more products of the immense Walther plant at Zella Mehlis, Germany. It might have been a P38, a PPK, or a PP. If a PP, chances are it was in .32 ACP (7.65 mm.), .380 ACP (9 mm. Kurz), or even the scarce .22 cal. model.

The prewar guns were made of the

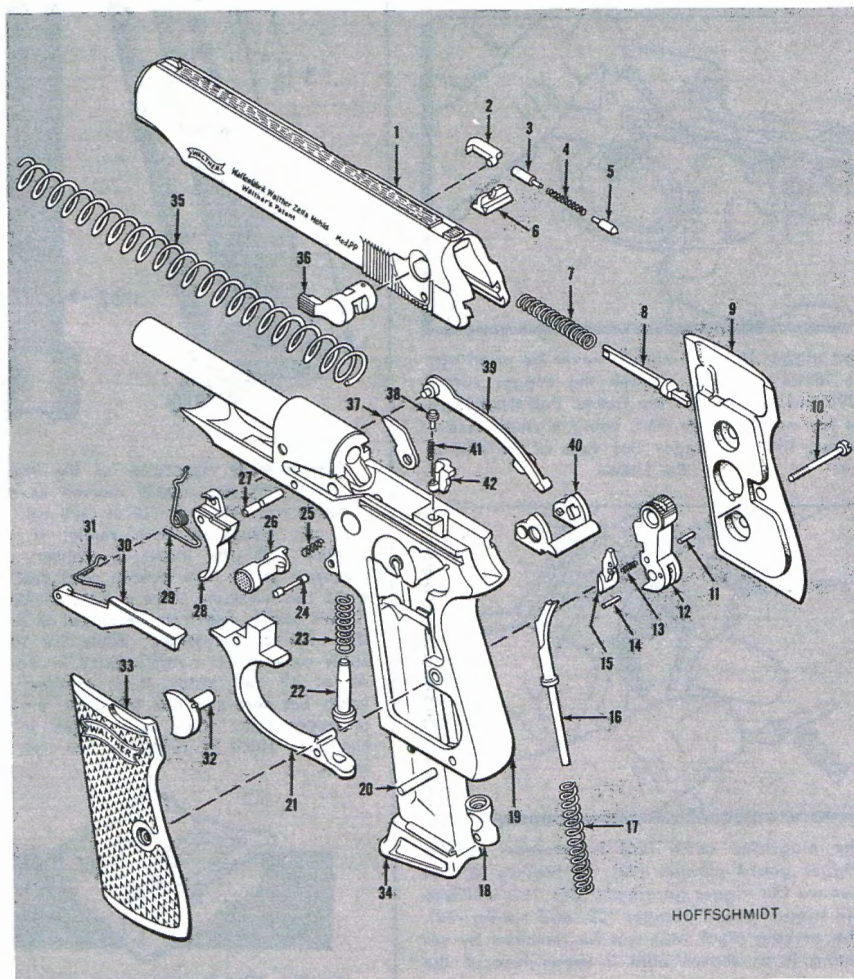
*Note: Walthers are now produced by the Carl Walther Arms Factory, Ulm/Donau, West Germany.*



To strip, remove the magazine and empty the chamber. Pull down the front end of the trigger guard (21) and push it to the right. It will rest against the frame and remain open. Pull the slide (1) to the rear as far as it will go. Lift up and ease it forward off the frame



To remove the extractor (2) it is necessary to depress the extractor plunger (3) well below the edge of the slide (1). Use a thin awl or a jeweler's screwdriver as shown, and rotate the extractor toward the firing pin



finest materials and the finish was the best quality. They could be had in lightweight models made of dural at extra cost. Stainless steel barrels were also available.

### Being made today

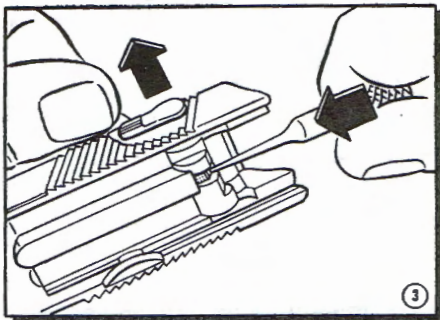
World War II put Walther out of business for a while, so he licensed the French firm of Manufacture de Machines du Haut-Rhin to manufacture the PP and PPK series. These pistols were sold under the trade name Manurhin. While they are mechanical dupli-

cates, they lack the really fine finish so characteristic of the Walther pistols.

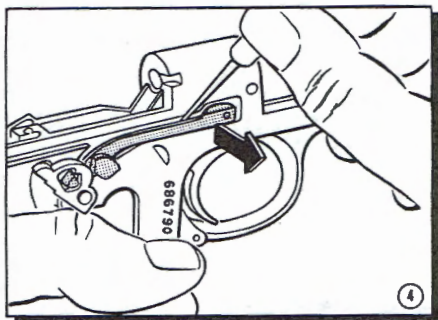
In addition to its double-action trigger mechanism, the model PP contains a number of enviable safety features. Unfortunately, one of the best of these, the cartridge indicator, had to be omitted from the .22 cal. models. Some late wartime .32 and .38 cal. guns are without it, too. It was left out to save machine operation.

The manual safety catch is the cleverest part of all. When the safety is put on, it rotates around the firing pin, lock-

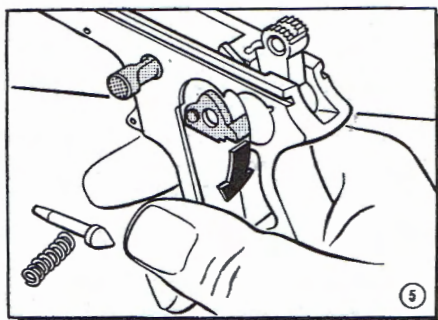




After the extractor spring (4) and safety catch plunger (5) have been removed, the safety catch (36) can be easily removed by first rotating it to the off position. Then, while pushing the firing pin deep into the slide, lift out the safety catch as shown



The trigger bar (39) should never be pried out. To remove it, first unhook the trigger spring (29) and push it into the frame. Pull the trigger as far as it will go and, using a small screwdriver, lift the trigger bar free of its slot in the frame

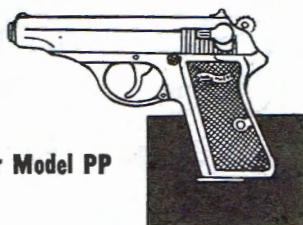


The magazine catch (26) is retained by the trigger guard plunger (22). To remove it, first remove the trigger guard pin (24). This will free the trigger guard plunger (22) and spring (23). The cocking piece (40) can be removed by rotating it as shown until it drops free of the frame

ing it to the rear and also placing itself in the way of the hammer. At the same time, it drops the hammer but allows a small block to rise and prevent the falling hammer going in far enough to strike the shrouded firing pin.

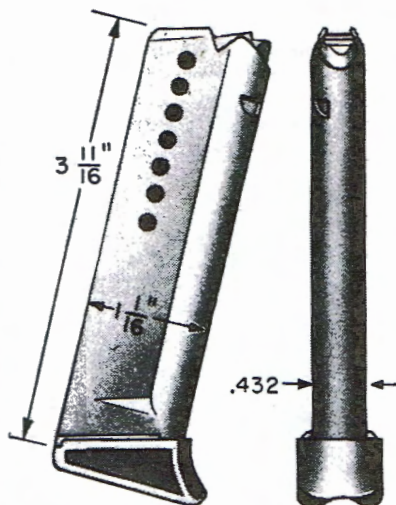
In spite of the intricate shapes of the operating parts, the design is excellent and will give years of foolproof service. Any malfunctions on the part of the .22 cal. models can usually be traced to using standard-velocity ammunition instead of the high-speed ammunition for which the gun was designed. —

Walther Model PP

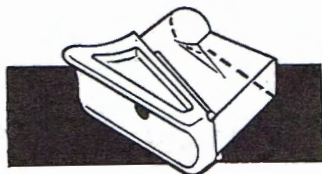


## PISTOL MAGAZINES

One of a series



German-made magazines for the Walther PP and PPK are usually marked as such, but only when found in .32 or .380 cal. The .22 cal. magazines were rarely, if ever, marked with the model or caliber. The magazine shown here looks a good deal like a .32 cal. magazine, since it lacks the spring fingers usually found on the mouth of American .22 cal. magazines. While the PP is fairly common, it is rarely found in .22 cal. As a .22 cal. pistol, it is compact and handy but does not have the signal pin that protrudes when there is a round in the chamber, which is found on the .32 cal. model.



Walther PP magazines were made with or without the finger extension. The .22 cal. models can be readily identified by the keyhole-shape cross section, instead of the usual flat-sided rectangular shape.



The thick, double-stepped follower and the single row of holes are telltale marks of the Walther PP .22 cal. magazines. Notice, too, the odd shape of the magazine lips.—E. J. HOFFSCHMIDT.

## Try It This Way

### Cleaning .22 clips

.22 cal. clips accumulate wax and become sluggish and inoperative. After trying gasoline and other solvents with indifferent results, I tried boiling them briskly for 10 minutes in a shallow pan of water. The wax and gunk stick to the side of the pan. The clips air dry in a few minutes and operate perfectly.—H. F. HARDING

### Fitting pistol grips

To salvage a set of inletted pistol grips which I had shaped unsatisfactorily, I drilled shallow 1/8" holes over the surface of the grips, at various angles. Working fast, I then covered the grips with Plastic Wood, and grasped the pistol while standing in aiming stance until it felt comfortable, supporting the muzzle a short time to allow the material to set partly. After the grips dried I smoothed them up, separated the halves with a coping-saw blade, and cleared the grip screws which had been covered. The grips do not look like fine furniture but they sure are comfortable.—THOMAS J. WILLIAMS

### Removing stuck case from chamber

The low-melting chamber cast alloy now on the market can be used in removing a separated case left sticking in the rifle chamber. Fill the chamber with the melted alloy as when taking a chamber cast, then with a rod used from the muzzle drive out cast and separated case together.—F. D. KING

### Tempering small parts

For tempering small and delicate parts, place the parts on the heating element of an electric range and turn the control to high. Watch the part and when the desired color is reached, quench it. Doors and windows should be closed during this operation so that no cold air will pass over the element. Parts treated this way have less tendency to warp and fine edges are not destroyed as when using a flame.—J. BUCKLEY RADER

### Chamfering tapped hole

A newly tapped hole is most easily chamfered with a large drill, hand held. It is much less likely to mar the surrounding surface than a file. Keep a sharp, new drill at the bench for this use.—R. J. PHILLIPS

### Removing spline cut in Springfield

One of the simplest and neatest ways to remove the spline cut in Springfield barrels was suggested to me several years ago by Ed Cushing, the well-known small-bore shot. Place barrel in milling machine, and sink 3/16" two-flute end mill to depth required to remove cut. Mill a recess tangent to barrel shoulder and receiver ring at rear, and extend far enough to remove all trace of spline at forward end. Setup must be made so cut follows taper of barrel. Stamp .30-'06 in recess.—CREIGHTON AUDETTE



# WEBLEY MARK IV REVOLVER

By DENNIS RIORDAN



Webley Mark IV .38 caliber revolver.

**W**EBLEY & Scott Ltd., of Birmingham, England, are among the world's leading handgun producers. They are particularly well known for their excellent top-break double-action revolvers offered commercially and formerly produced in large quantity for the British government.

The Webley firm worked in close cooperation with the British War Office on handgun matters from 1887 to the 1920's. About 1927, however, this close association ended when the War Office introduced the government-made Enfield .38 caliber revolver. In 1929 the Webley firm introduced the Webley Mark IV .38 caliber Police and Military Model revolver for commercial sales.

Chambered for the .38 Smith & Wesson cartridge, the Mark IV is of top-break design with double-action lock-work and exposed hammer. A V-shaped mainspring drives the hammer and also

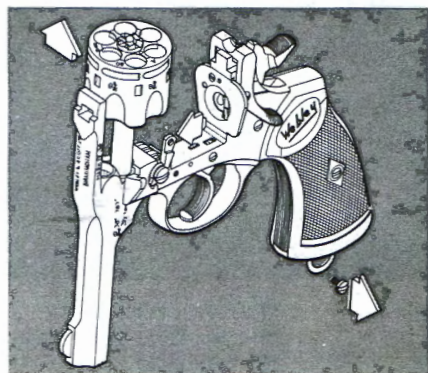
actuates the mainspring lever. As the trigger moves forward after each shot, the hammer rebounds to a safe position. The barrel is pivoted open for loading and unloading of the cylinder while depressing the barrel catch on the left of the frame. All cartridges or fired cases are extracted and ejected automatically and simultaneously as the barrel is opened.

## Sights are fixed

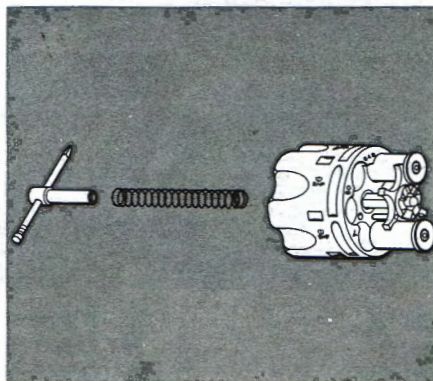
In keeping with its simple, rugged mechanism, the Mark IV has fixed sights with the rear sight an integral part of the barrel catch. The revolver has well-proportioned checkered plastic grips and a ring-type butt swivel. It holds six rounds, weighs 27 ozs., and is offered with choice of four-inch or five-inch barrel. Exposed metal parts are blued, and the workmanship and finish are excellent.

There are also target and pocket versions of the Mark IV. Offered in .38 Smith & Wesson and .22 long rifle calibers, the Target Model features a six-inch barrel and adjustable target sights. The two different pocket versions are produced in .38 Smith & Wesson and .32 Smith & Wesson calibers, and have three-inch barrels. The Pocket Model has a small grip to give compactness, while the OP (Overhand Pocket) Model is equipped with a large grip and a butt swivel.

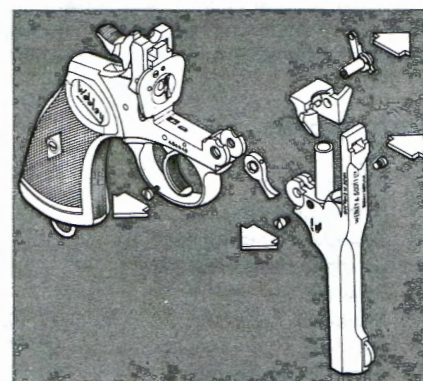
Although the Mark IV is generally similar to British Enfield No. 2 Mark I and Mark I\* Service revolvers, these revolvers differ in mechanical details. One of the chief differences is that the Enfields have a sideplate while the Mark IV does not. When the British urgently needed handguns during World War II, the War Office placed contracts for the Mark IV even though components differed from those of the Enfields.



**1** To field-strip the Mark IV, depress the thumb lever of barrel catch (10), open revolver fully, and remove any cartridges. Remove cam lever lock screw (38) with a coin. Rotate cam lever (39) upward and push it toward barrel (1). Lift cylinder (6) off its axle.

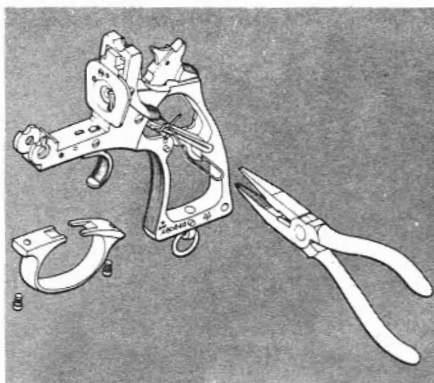


**2** Place two empty cartridge cases in opposite chambers of cylinder. Insert a nail through hole in extractor nut (2) and use as a lever to unscrew nut. Remove extractor (7) and extractor spring (3). This is sufficient stripping for normal cleaning.

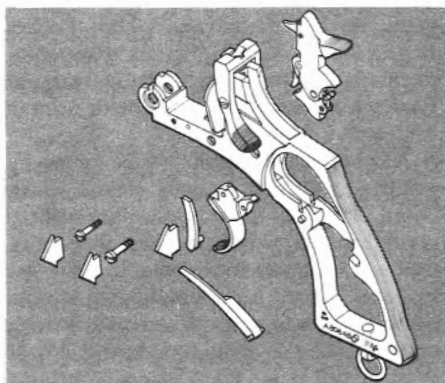


**3** For further disassembly, unscrew hinge pin screw (46) and push hinge pin (42) out to left. Barrel and extractor lever (45) can now be removed and separated. Unscrew the two cylinder cam screws (5) and remove cylinder retaining cam (4).





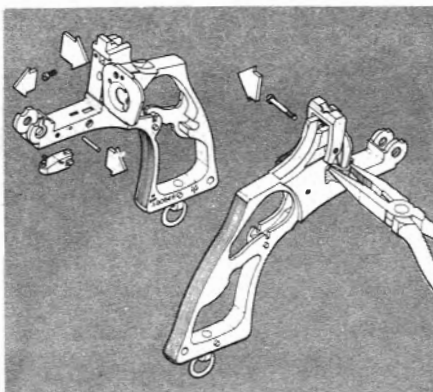
**4** Unscrew grip screw (30) and remove grips (29), (16). Then, cock the hammer (8). Loop a paper clip around the mainspring (25), securing the wire by twisting with pliers. Pull trigger (20), and lower hammer with thumb. Unhook upper limb of mainspring from hammer swivel (14), and lift out mainspring. Relieve mainspring tension by pinching limb ends together with padded pliers and sliding loop of paper clip toward closed end of spring. Unscrew trigger guard screws (23) and remove trigger guard (22).



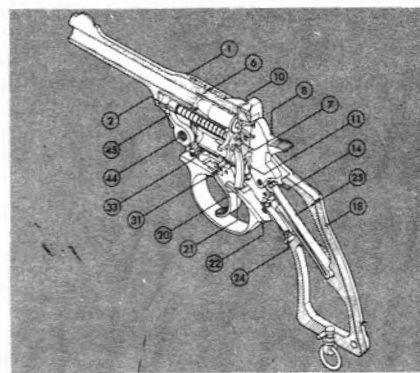
**5** Lift mainspring lever (24) from notches in frame (18) and slide out to rear. Unscrew trigger screw (27), and pull trigger and hand (21) downward from the frame and separate. Unscrew hammer screw (26) and lift out hammer.

#### PARTS LEGEND

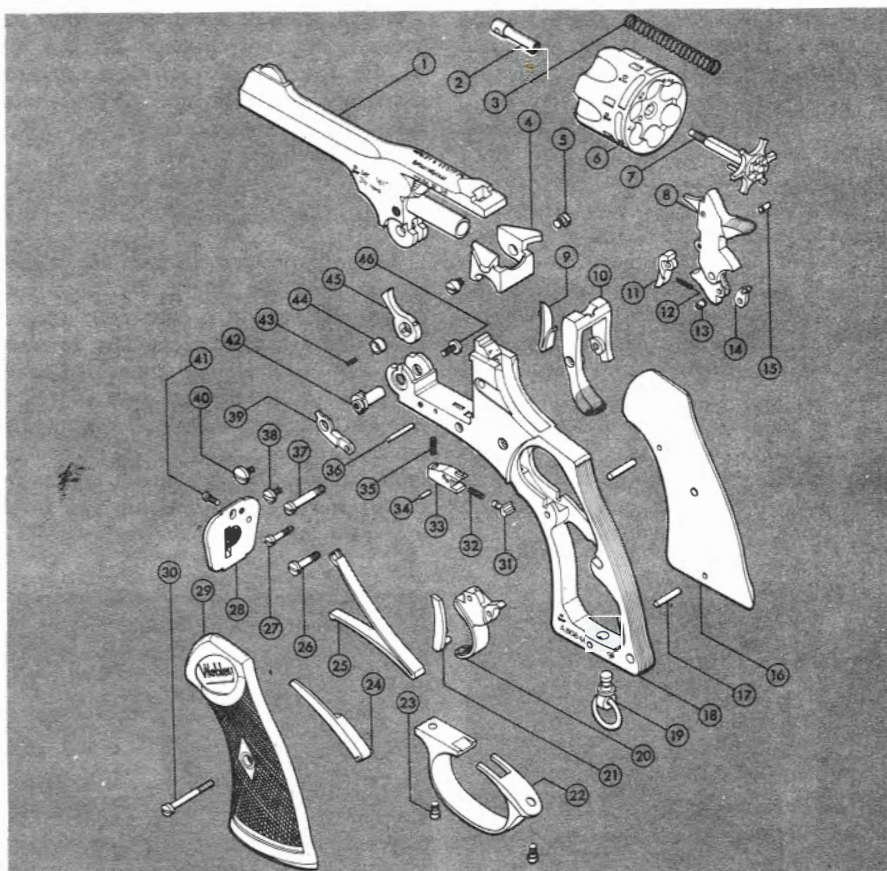
- |                           |                             |                       |                            |
|---------------------------|-----------------------------|-----------------------|----------------------------|
| 1. Barrel                 | 17. Grip pin (2)            | 27. Trigger screw     | 37. Barrel catch screw     |
| 2. Extractor nut          | 18. Frame                   | 28. Recoil shield     | 38. Cam lever lock screw   |
| 3. Extractor spring       | 19. Lanyard ring            | 29. Left-hand grip    | 39. Cam lever              |
| 4. Cylinder retaining cam | 20. Trigger                 | 30. Grip screw        | 40. Cam lever screw        |
| 5. Cylinder cam screw (2) | 21. Hand                    | 31. Bolt catch        | 41. Recoil shield screw    |
| 6. Cylinder               | 22. Trigger guard           | 32. Bolt catch spring | 42. Hinge pin              |
| 7. Extractor              | 23. Trigger guard screw (2) | 33. Bolt              | 43. Extractor lever spring |
| 8. Hammer                 | 24. Mainspring lever        | 34. Bolt catch pin    | 44. Extractor lever roller |
| 9. Barrel catch spring    | 25. Mainspring              | 35. Bolt spring       | 45. Extractor lever        |
| 10. Barrel catch          | 26. Hammer screw            | 36. Bolt pin          | 46. Hinge pin screw        |
| 11. Hammer catch          |                             |                       |                            |
| 12. Hammer catch spring   |                             |                       |                            |
| 13. Hammer swivel screw   |                             |                       |                            |
| 14. Hammer swivel         |                             |                       |                            |
| 15. Hammer catch screw    |                             |                       |                            |
| 16. Right-hand grip       |                             |                       |                            |



**6** Compress barrel catch spring (9) against recoil shield (28) with padded pliers, meanwhile unscrewing barrel catch screw (37). Slide barrel catch and spring off to rear. Unscrew recoil shield screw (41), and drive recoil shield out to left. Use pin punch to drive out bolt pin (36). Bolt (33) and spring (35) fall free as punch is removed. Reassemble in reverse.



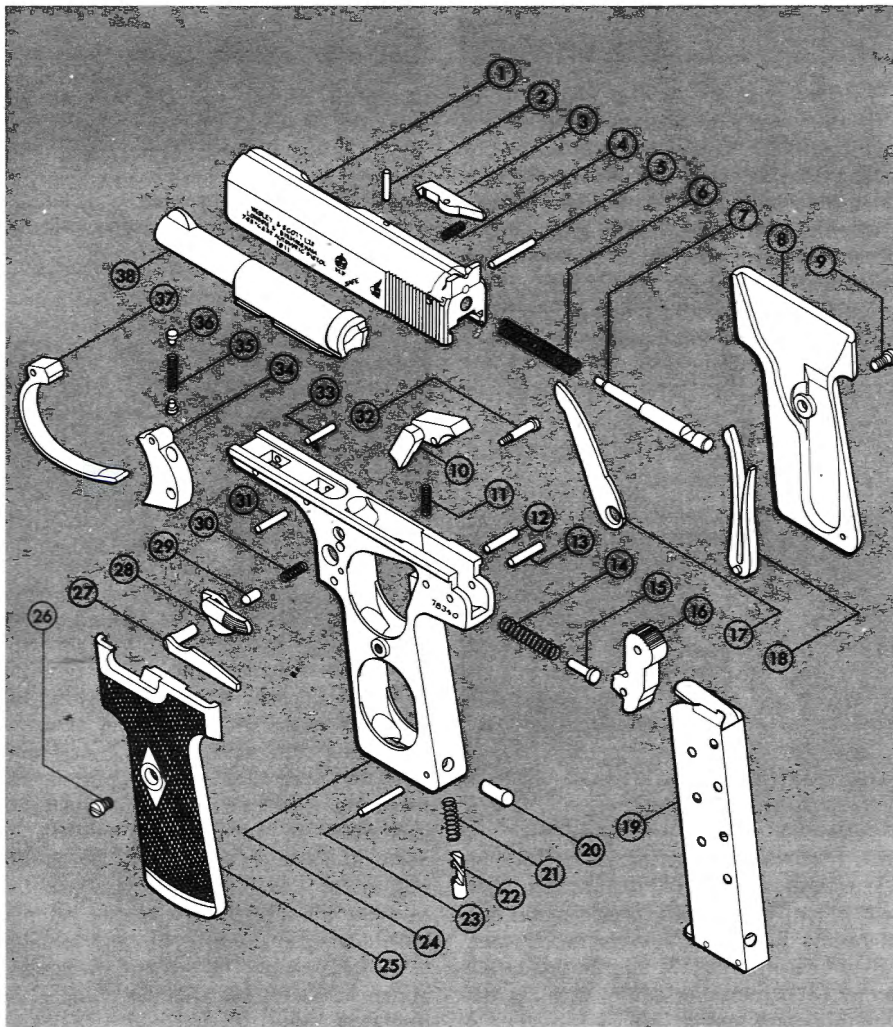
**7** Cutaway shows revolver with parts at rest. Hammer is in rebound position, locked by mainspring lever; cylinder is secured by bolt. One chambered cartridge lies under the hammer. Forward portion of mainspring lever has been broken away for clarity. Parts are number keyed to parts legend.





# WEBLEY METROPOLITAN POLICE PISTOL

By DENNIS RIORDAN



## Parts Legend

1. Slide
2. Extractor pin
3. Extractor
4. Extractor spring
5. Firing pin retaining pin
6. Firing pin spring
7. Firing pin
8. Right grip
9. Right grip screw (long)
10. Sear
11. Sear spring
12. Sear pin
13. Hammer pin
14. Hammer spring
15. Hammer spring plunger
16. Hammer
17. Recoil arm
18. Recoil spring
19. Magazine
20. Magazine catch
21. Magazine catch spring
22. Magazine release button
23. Magazine catch pin
24. Frame
25. Left grip
26. Left grip screw (short)
27. Trigger bar
28. Safety
29. Safety detent
30. Safety detent spring
31. Trigger pin
32. Safety screw
33. Trigger guard pin
34. Trigger
35. Trigger Spring
36. Trigger spring plunger (2)
37. Trigger guard
38. Barrel



**P**RODUCED by Webley & Scott, Ltd., Birmingham, England, the Webley Metropolitan Police Model .32 caliber automatic pistol was designed by Webley works manager W. Whiting. First of the Webley automatic pistols, it was offered from 1906 to 1940 and was the official handgun of the London Metropolitan Police and many other police departments in the British Empire.

Typical of automatic pistols chambered for the .32 Automatic cartridge, the Metropolitan Police is blowback-operated, and the slide is mounted on the frame in the usual manner. However, the recoil spring is V-shaped and housed under the right grip, an unusual feature. Also, unlike most center-fire

blowback-operated pistols, the barrel extends considerably forward of the slide.

In most other respects, this pistol is conventionally designed. The exposed hammer has a rounded spur, and the eight-round magazine is detached by pressing a release on the bottom of the handle. Metal parts are blued steel, and the grips are checkered hard rubber. The safety is on the frame above the left grip. It is conveniently located for the thumb. However, it is moved upward for disengagement which makes operation rather awkward.

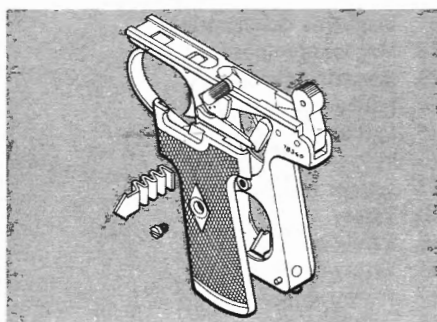
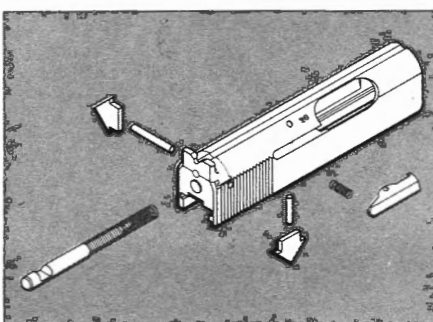
The pistol weighs 20 ozs. unloaded. Well made, it is of simple design, functions reliably, and is very easy to field-

strip. Another favorable feature is the large comfortable grip. However, the grip angle with line of bore is almost 90° which is not conducive to natural pointing. Also, the right grip piece is fragile and easily broken since it is hard rubber and thin where it houses the recoil spring.

Identifying markings are a crown above the letters "M.P." on the left of the slide. There is another .32 caliber Webley automatic pistol similar to the Metropolitan Police Model but without these markings. Also, the Metropolitan Police Model has a fixed rear sight that projects above the slide while the other pistol has a groove on the slide that serves as a rear sight.

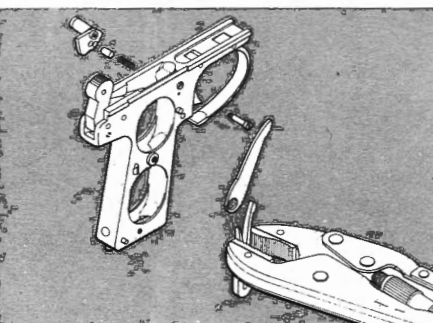


**1.** To field strip, depress magazine release button (22) and remove magazine (19). Clear the chamber. Lower hammer (16) and move safety (28) down to safe position. Snap rear of trigger guard (37) forward and down. Then push slide (1) and barrel (38) forward off frame (24) and separate. This is sufficient take-down for normal cleaning.

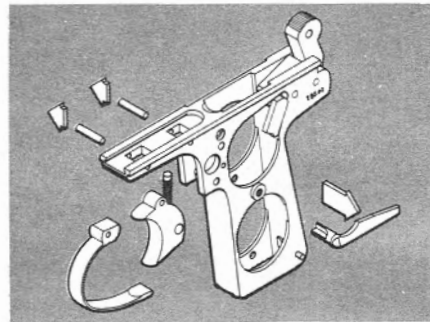


**2.** To strip slide, use punch to drive out firing pin retaining pin (5), and remove firing pin (7) and firing pin spring (6) to rear. Drive extractor pin (2) downward out of slide, and lift out extractor (3) and extractor spring (4).

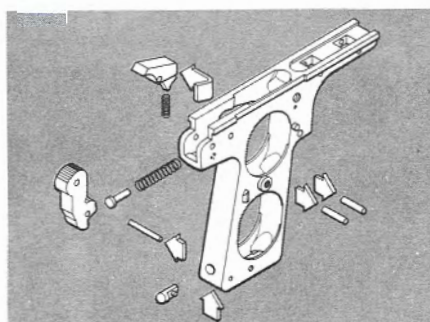
**3.** The grips are brittle and must be removed with care: never attempt to pry them off. Remove left grip screw (26) and rotate safety to its upward position. Magazine catch pin (23) protrudes through both sides of frame and fits grips snugly. Reach upward through bottom of magazine well and apply slight pressure in this area while working left grip (25) off with a back and forth motion. Use same procedure for right grip (8).



**4.** Remove recoil spring (18) with locking-jaw pliers or mainspring vise. Grasp spring as high as possible and compress just enough to allow removal. Lift off recoil arm (17) and loosen safety screw (32), releasing safety with its detent (29) and spring (30).



**5.** Pull trigger bar (27) out through left of frame. Push out trigger guard pin (33) and remove trigger guard. Push out trigger pin (31) to release trigger (34) along with its spring (35) and plungers (36).



**6.** Drift out magazine catch pin (23) and depress magazine release button (22). Grasp protruding end of magazine catch (20) and pull it from frame. Ease out magazine release button and magazine catch spring (21). Push out sear pin (12). Pull sear (10) forward and down, and remove to the left. Be careful not to lose sear spring (11). Push out hammer pin (13), and lift out hammer (16), hammer spring (14), and plunger (15). Reassemble in reverse. A tapered punch is useful for aligning holes when replacing pins.



# WHITNEY

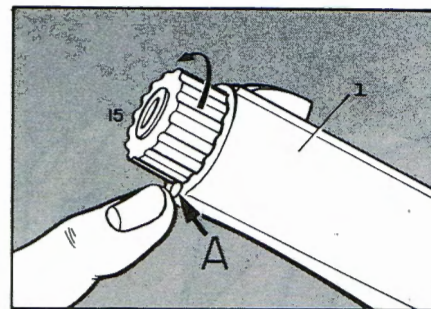
# .22

# AUTOMATIC

# PISTOL



By JAMES M. TRIGGS



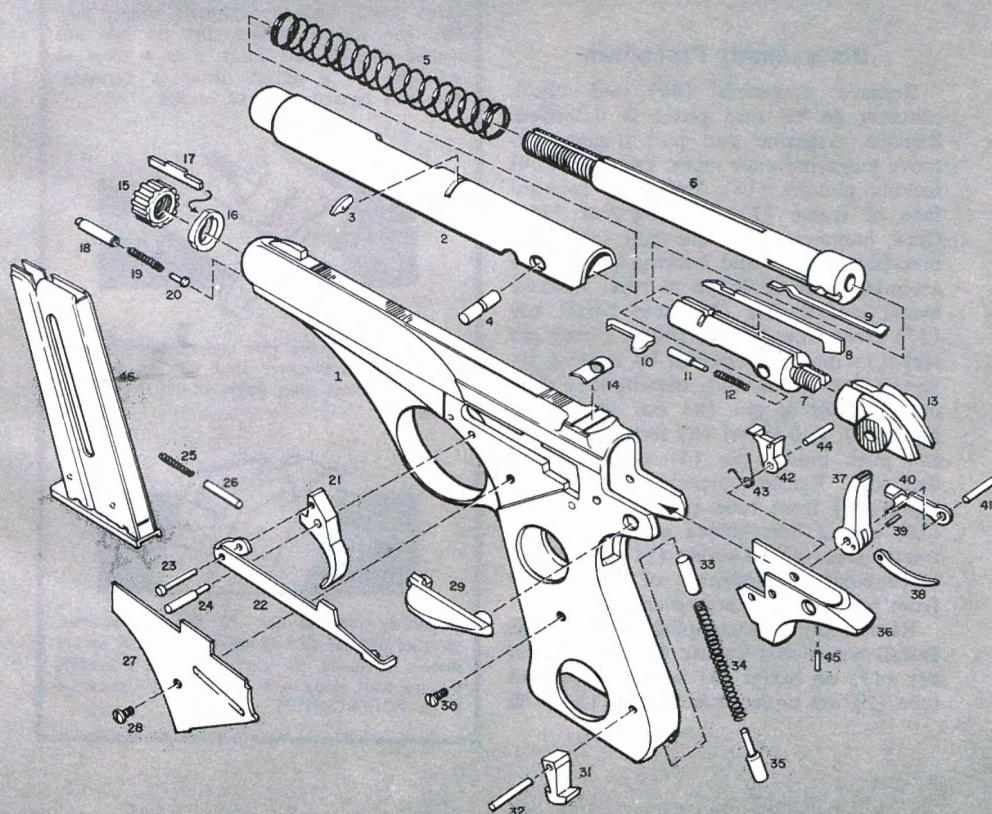
**1** While holding barrel locking plunger (18) flush with face of frame as shown at "A", unscrew nut (15) counter-clockwise as indicated by arrow.

**T**HE Whitney .22 long rifle semi-automatic pistol was introduced in 1956. It is blowback operated with detachable 10-round capacity magazine in the grip.

The action mechanism is a self-contained unit retained within the hollow aluminum alloy frame by a serrated nut threaded to the muzzle end of the barrel. By removing this nut the entire action assembly can be slid to the rear and out of the frame. A separate internal washer and key position and align the assembly within the frame.

The mechanical safety on the Whitney is engaged by pushing it down, not up. This is contrary to the usual practice with semi-automatic pistols.

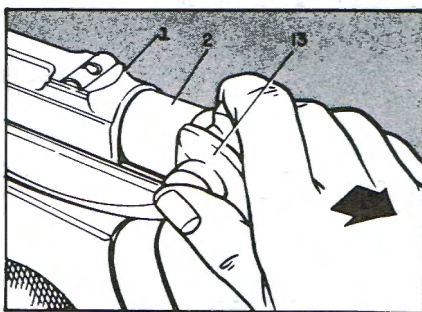
The Whitney pistol was made by Whitney Firearms, Inc., of North Haven, Conn., which is no longer in business. There was no connection between this firm and the Whitney Arms Co. which ceased operations in 1888.



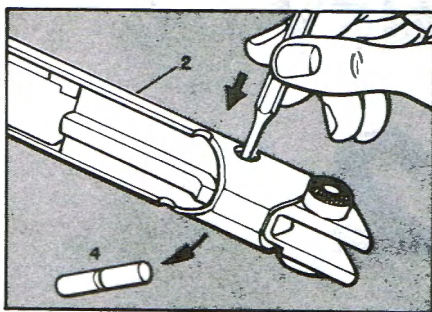
## Parts Legend

1. Frame
2. Tube
3. Firing pin lock
4. Breech pin
5. Mainspring
6. Barrel
7. Breechblock
8. Firing pin
9. Ejector
10. Extractor
11. Extractor plunger
12. Extractor spring
13. Cocking piece
14. Rear sight
15. Nut
16. Barrel seat washer
17. Barrel key
18. Barrel locking plunger
19. Barrel locking plunger spring
20. Spring seat
21. Trigger
22. Sear bar
23. Trigger connector
24. Trigger connector
25. Trigger connector
26. Trigger connector
27. Trigger connector
28. Trigger connector
29. Trigger connector
30. Trigger connector
31. Trigger connector
32. Trigger connector
33. Trigger connector
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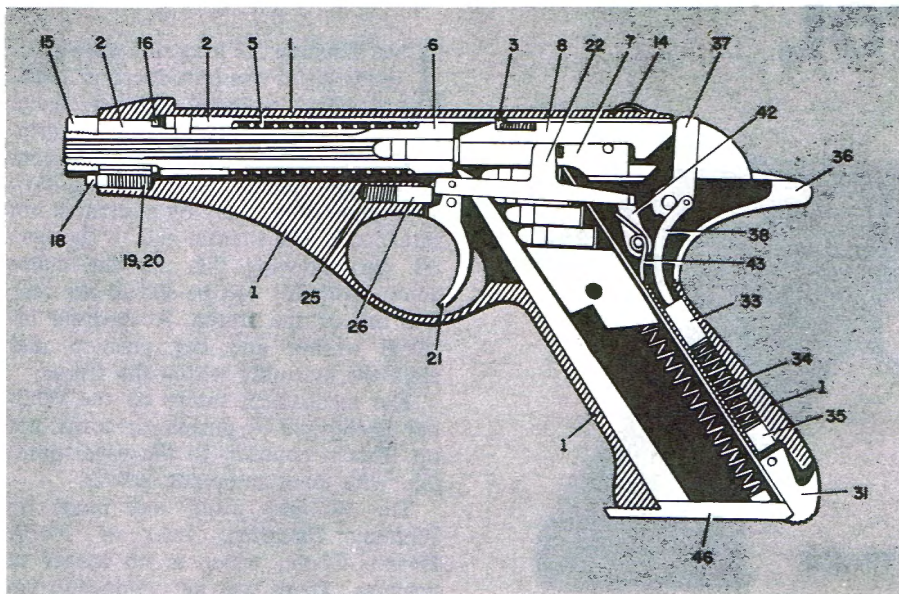




**2** With hammer at full cock position, draw tube assembly out of frame (1) to rear by pulling back on cocking piece (13) as shown by arrow.



**3** While pulling forward on barrel slightly to lessen tension on breech pin (4), push pin out of tube (2) with punch. (Underside of assembly is shown).



**4** The longitudinal section shows the relative position of all parts. Pistol is shown here with a cartridge in the chamber and hammer uncocked.

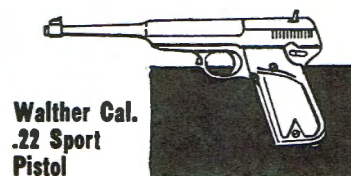
### Disassembly Procedure

Remove magazine (46) and check chamber to be sure pistol is unloaded. Replace magazine and pull trigger. Remove magazine once more. Depress barrel locking plunger (18) flush with forward face of frame (1). Unscrew nut (15). Cock hammer (37) and pull tube (2), breechblock (7), and cocking piece (13) assembled out of frame to rear. Remove barrel seat washer (16) and barrel key (17) from front end of frame. Firing pin lock (3) may be removed by rapping inverted tube (2) sharply, causing it to drop out. Pull firing pin (8) out of breechblock (7). Pull barrel (6) forward slightly and push breech pin (4) out of barrel and tube. Remove breechblock (7) and barrel (6) from tube (2). Lift extractor (10) out of breechblock and remove extractor plunger and spring (11 & 12) from breechblock. Disassembly of ejector (9) from barrel is not recommended.

Reassembly is accomplished in reverse. Install barrel seat washer (16) and barrel key (17) on barrel (6) before barrel and tube (2) are replaced in frame (1). ■

- 24. Trigger pin
- 25. Trigger spring
- 26. Trigger spring plunger
- 27. Side plate
- 28. Side plate screw
- 29. Safety
- 30. Grip screws (2)
- 31. Magazine catch
- 32. Magazine catch pin
- 33. Hammer spring plunger
- 34. Hammer spring
- 35. Hammer spring seat
- 36. Action frame
- 37. Hammer
- 38. Strut
- 39. Strut pin
- 40. Magazine disconnect safety
- 41. Hammer pin
- 42. Sear
- 43. Sear spring
- 44. Sear pin
- 45. Safety lock pin
- 46. Magazine assembly

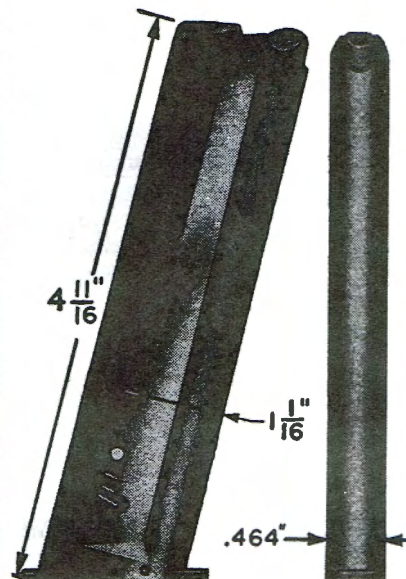
Note: Grips are not shown.



Walther Cal.  
.22 Sport  
Pistol

## PISTOL MAGAZINES

One of a series



Shortly after World War I, Walther brought out their cal. .22 long rifle Sport pistol. Like all Walther guns, the workmanship was top-notch and it had an adjustable trigger pull. This gun was well liked, but its sale was limited since it was about 3 to 4 times as expensive as a pocket pistol in Germany. Magazine capacity was 12 rounds.



The magazine for this gun contains a novel retractable screwdriver that can be used to adjust the front sight screw or the trigger pull screw.



Unlike American cal. .22 pistol magazines, Walther did not find it necessary to use spring fingers to guide the cartridge. The magazine is very well made and rarely gives trouble.—E. J. HOFFSCHMIDT